

**THE NORTHWESTERN EXTENT OF  
SANDY LAKE WARE:  
A CANADIAN PERSPECTIVE**

**A Thesis**

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## ABSTRACT

Sandy Lake ware, a late precontact to early postcontact archaeological manifestation, was first identified in central Minnesota by Cooper and Johnson (1964). Since then, few studies about this ware have been completed. It is considered to be part of the *Psinomani* culture and occurs across a large area of central North America, where it persisted from about A.D. 1000 to 1750. Archaeological sites with *Psinomani* components often occur in regions where wild rice grows. It is likely that the people who left behind Sandy Lake ware were ancestral to the Eastern Dakota in central Minnesota and the Assiniboine in southern Canada. The *Psinomani* and Selkirk composite likely represent the material remains of an early Assiniboine and Cree alliance.

Three problems related to Sandy Lake ware were identified, including classification uncertainties, associated cultural questions and its northwestern extent; the latter had never been fully assessed. By studying this ware and comparing it to other pottery, some classification complications were simplified. A synthesis of present information about the *Psinomani* culture was also completed. Collections from sites across a large area in south central Canada were examined to determine the northwest extent of Sandy Lake ware. One of the first inventories of shell tempered pottery, likely Sandy Lake ware, was compiled for the study area. The Stamped type is now known to have been recovered several 100 km farther northwest into Canada than previously determined.

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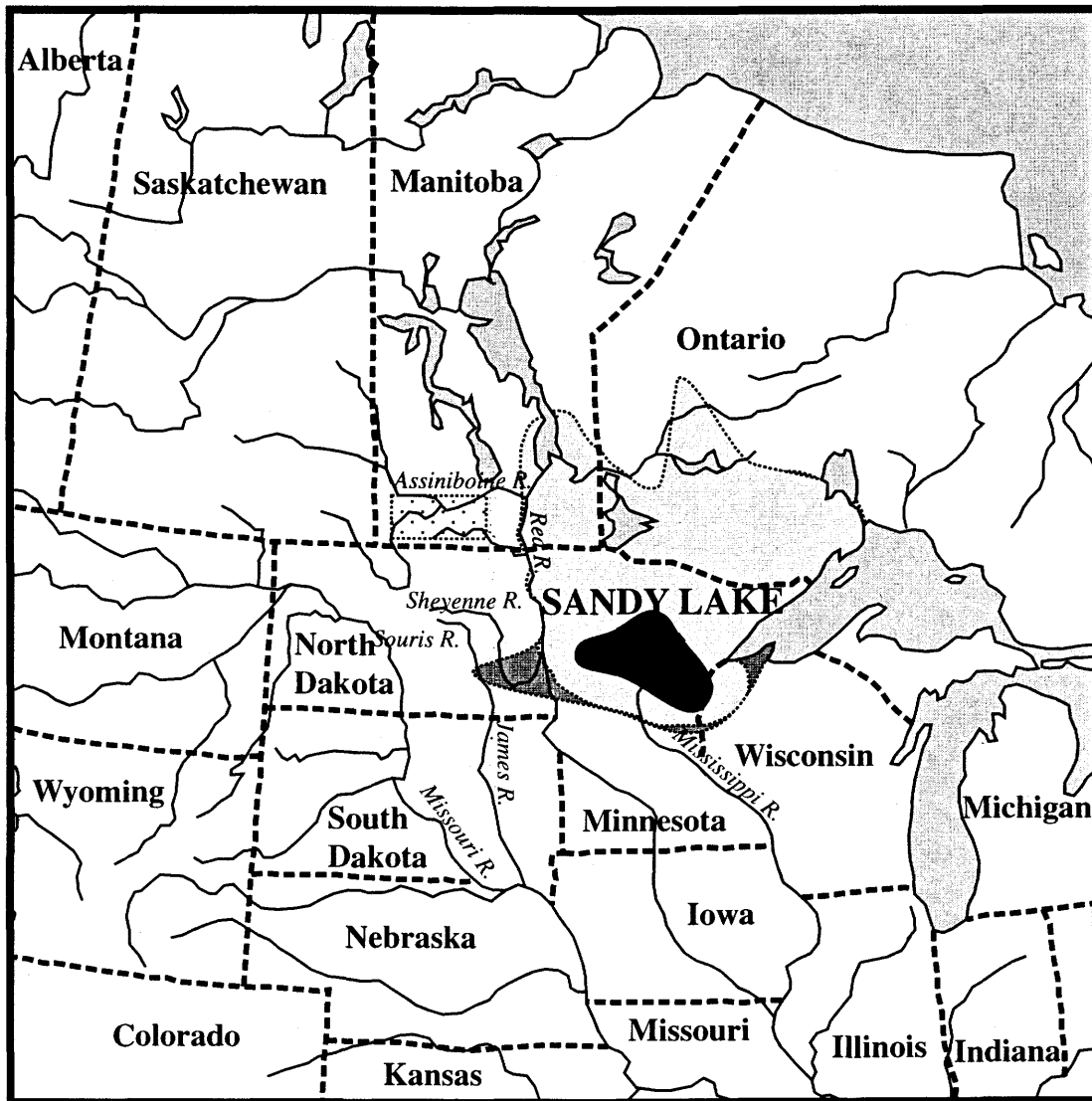
## **CHAPTER ONE: INTRODUCTION**

This chapter provides a brief introduction of what is already known about Sandy Lake ware (SLW). The problems, goals, and methods are explained and an outline of the rationale behind choosing this project is presented.

### ***1.1 Background***

Sandy Lake ware dates to the late precontact/early contact period (between about A.D. 1000-1750 in Birk 1979:175). It is found at sites in northwestern Wisconsin, north and central Minnesota, eastern North Dakota, northwestern Ontario, and southern Manitoba (Figure 1.1). Cooper and Johnson (1964) named the ware including the two types called Sandy Lake Corded and Sandy Lake Smooth, after Big Sandy Lake in Aitkin County, Minnesota. The pottery is associated with side-notched and triangular projectile points as well as other typical late precontact artifacts. It is also occasionally found with postcontact items. In this large area, SLW is associated with wild rice (*Zizania aquatica* or *palustris* in Dore 1969) harvesting belts, camp sites, and occasionally villages or burials (Birk 1979).

***1.1.1 Study Area.*** Sandy Lake ware was initially found at sites in northwestern Wisconsin and northern Minnesota, and it was postulated to be in southeastern Manitoba (Cooper and Johnson 1964). More recently it has been recognized in northwestern Ontario (Arthurs 1978), eastern North Dakota (Birk 1979:175; Schneider 1982; Snortland-Coles 1985) and southwestern Manitoba (Michlovic 1987; Nicholson 1988; Taylor 1994a). The distribution of SLW, prior to this research, is illustrated in Figure 1.1. Walde (1994:146-7) recently suggested that SLW was the precursor to the Mortlach







-  Original cluster of sites (Cooper and Johnson 1964:475).
-  Distribution after Arthurs (1978:60) and Birk's (1979:177) additions.
-  Results of the Lake Superior Basin Workshop (Participants 1988:58).
-  Extent as a result of Nicholson (1991) and Taylor (1994a).

Figure 1.1. Conventional distribution (*circa.* 1995) of Sandy Lake ware from about A.D. 1000-1750.

phase in Saskatchewan, North Dakota, and Montana. Thus, the eastern and southern extent of SLW had been established for some time, while its western and northern limits remained problematic. Hence, the study area (Figure 1.2) for this thesis encompasses regions where: 1)SLW has been reported in small numbers but never really dealt with (southern and central Manitoba); 2)it has been or may have been misidentified (southern Manitoba, eastern North Dakota); and 3)there is a suggested relationship to other pottery (southeastern Saskatchewan).

Sandy Lake ware has been found or suggested to be present across a large area. This large distribution crosses several environmental zones (Figure 1.3) including parts of the Eastern Woodlands, Northeastern Grasslands, and forest riverine environments (Peterson 1986). Parts of the Boreal Forest, Aspen Parklands, and more westerly parts of the Northeastern Grasslands are also pertinent to this study.

While compiling the most recent list of sites with this ware and associated dates, literature from all the places where this pottery has been identified was examined in order to check for regional differences as well as for little known SLW sites. Thus, even though the actual study area from which pottery and artifacts were examined consists of part of Manitoba and Saskatchewan (Figure 1.2), almost all literature relating to the original distribution of SLW was reviewed. Since many researchers are uncertain about the ware, its distribution, and related artifacts, this update is both necessary and useful.

Although some of the pottery from the study area (Figure 1.2) has been analyzed and described in other reports, the northwestern extent of SLW has not specifically been studied. Thus, the research on which this thesis was based involved the examination of collections from southeastern, central, and southwestern Manitoba as well as southeastern and central Saskatchewan in order to establish the presence or absence of SLW. Examples of SLW from Minnesota and other pottery wares, such as Oneota, from several states were examined, although some published descriptions or drawings were used for



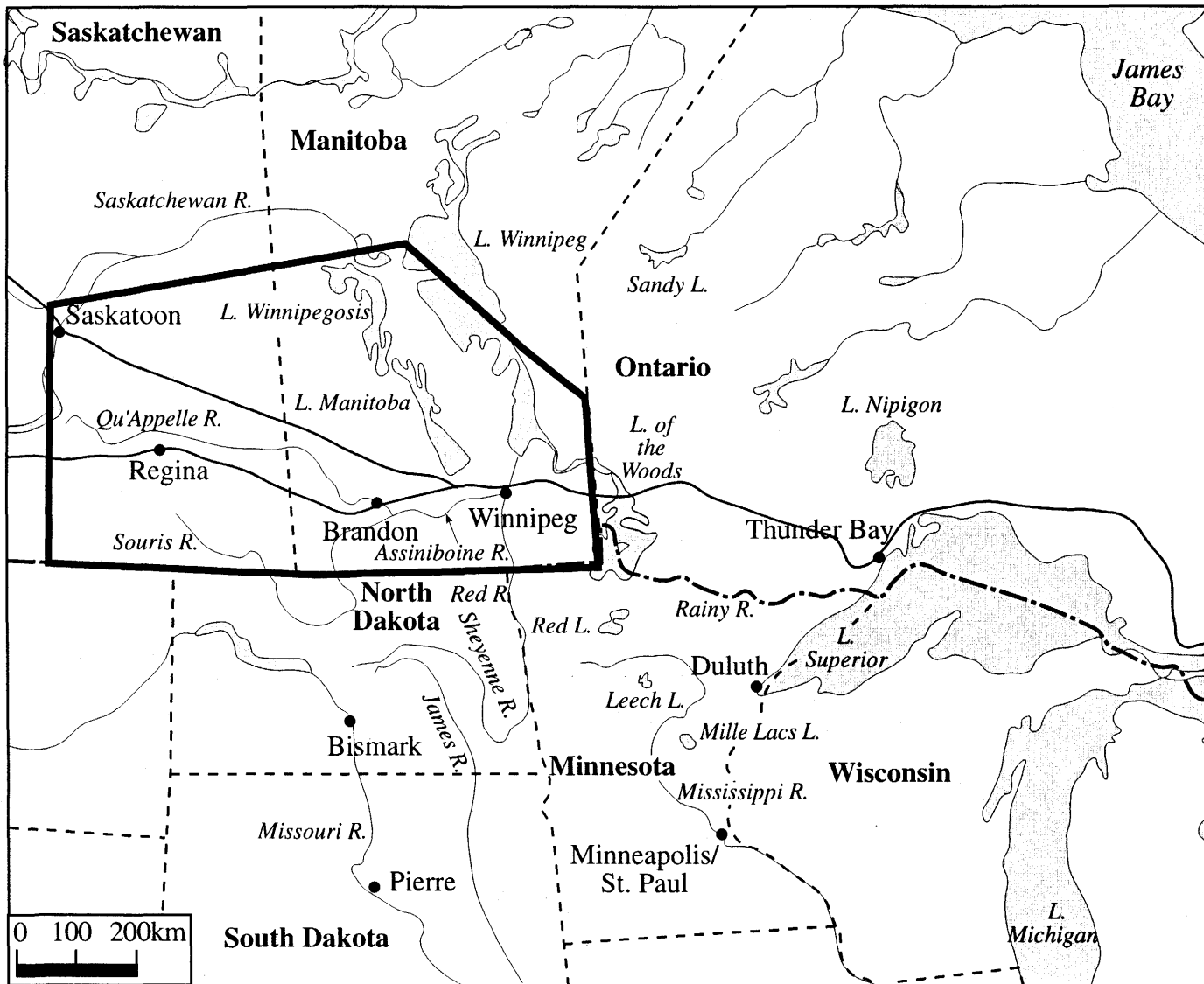


Figure 1.2. Research study area for this thesis.

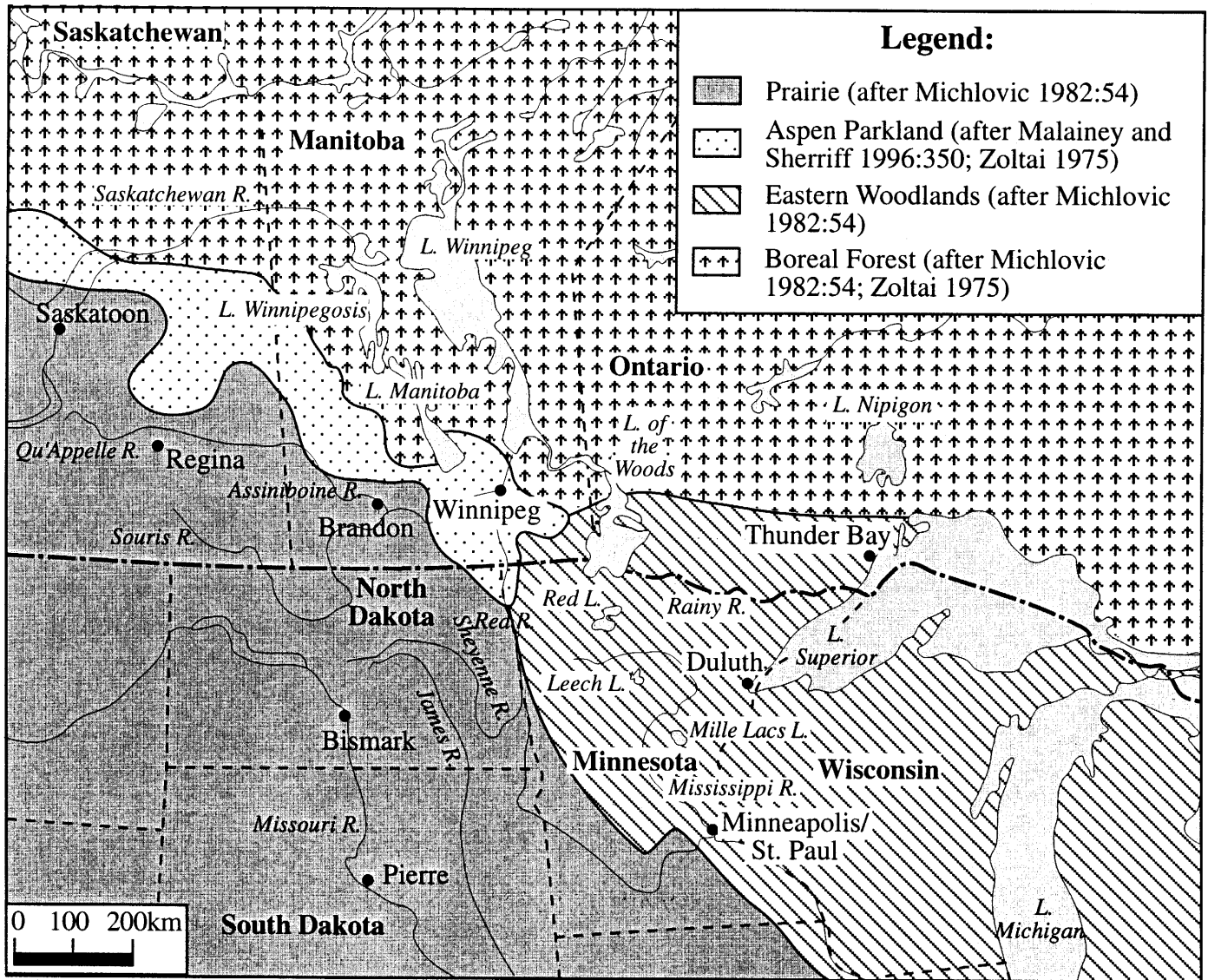


Figure 1.3. Environmental zones pertinent to this study.

reference. Thus, the study area was determined from available information about SLW, related pottery, and previously published information.

Although an emphasis was placed on pottery, other aspects of site materials were examined such as subsistence and settlement, features, faunal remains, and lithics. The context of artifacts was also noted as this detail is an important part of any archaeological analysis.

**1.1.2 General Description.** Several attributes, when found together, are generally accepted by the archaeological community as characteristic of SLW (Figure 1.4). Essentially, vessels are globular with little evidence of a neck or shoulder. Surface finishes are usually vertically cord impressed or smooth, resulting in two types called Sandy Lake Corded and Sandy Lake Smooth (Cooper and Johnson 1964). Cooper and Johnson (1964) also described plain and interior notched lip decorative variants of these types. Birk (1979:178) proposed SLW with checked and simple stamped exterior surface finishes as ‘provisional varieties.’ Peterson (1986:14) included both of them as Sandy Lake Stamped, which is the term this author will use. However, Cooper and Johnson (1964) had used the surface finishes to indicate the types of SLW and the decoration to divide into varieties, so Birk’s (1979) Sandy Lake Stamped is a type.

Peterson’s (1986) study of Minnesota SLW introduced two alternate types, Sandy Lake Grit tempered and Sandy Lake Shell tempered, although other researchers have been slow to use these newer terms. Decoration, when present, usually consists of interior lip notches or notched lips made with various tools or cord wrapped tool impressions. One interesting trait is the placement of decoration on the inner shoulder portion of some vessels (Birk 1977a). Another characteristic of SLW is very thin walled vessels and a laminated paste. Thus, the general description of SLW vessels, particularly from its southern distribution, is fairly well established.

Arthurs (1978:61-62) noted that more northern SLW vessels differed in several ways from those found to the south, such as: grit tempering; no smooth surface finishes;

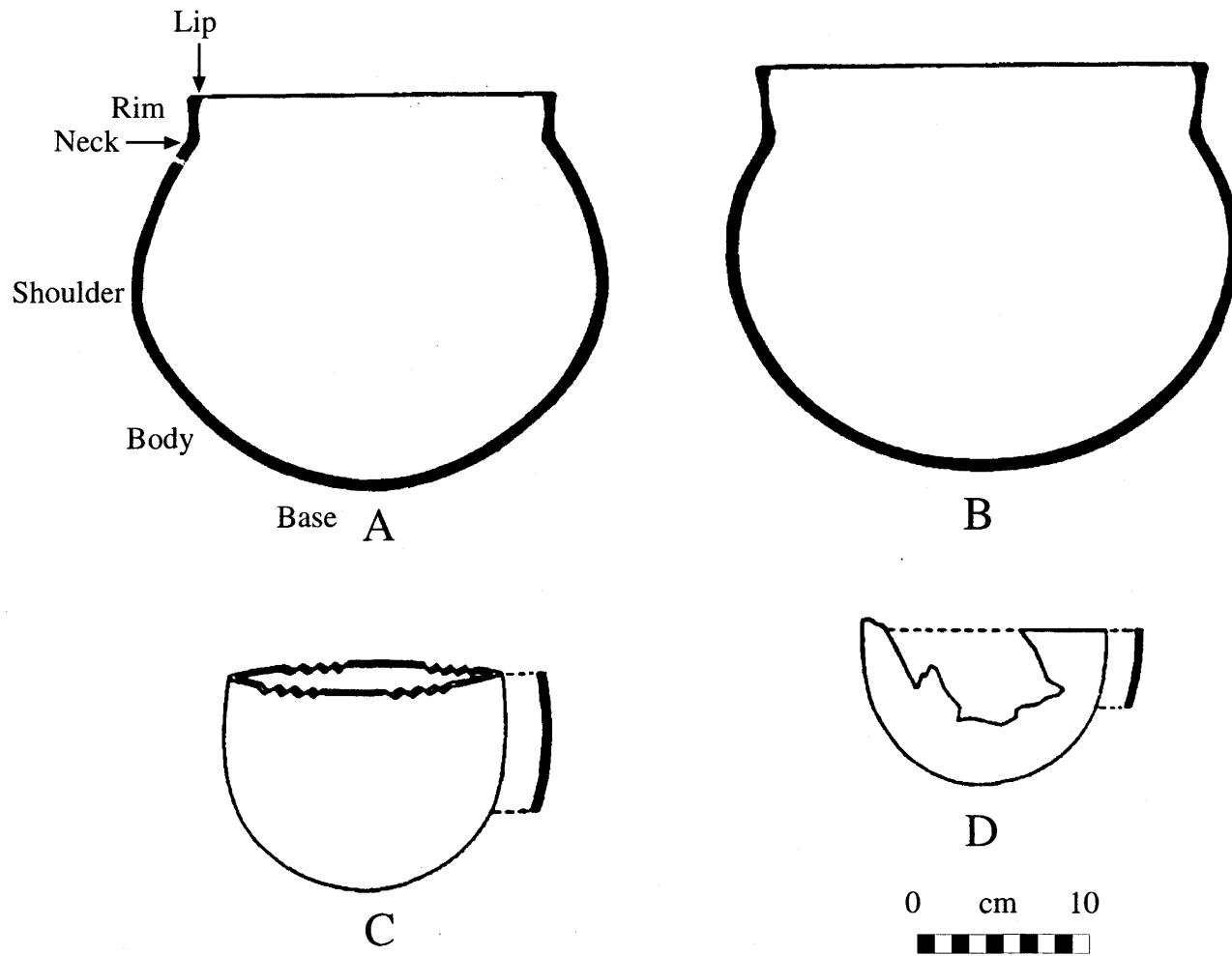


Figure 1.4. Sandy Lake ware vessels from several sites: A, B) Habitation vessels from Fickle site, Clam River, Wisconsin; and C, D) Mortuary pots from Osufsen Mound, Itasca County, Minnesota. Modified after Cooper and Johnson (1964:477, Figure 3).

having a row of exterior punctates; some excurvate rim profiles; and different decoration methods. Hence, his description is of a regional variation of SLW in northwestern Ontario and southeastern Manitoba.

**1.1.3 Time Frame.** Sandy Lake ware is found in sites which date from late precontact to early contact times (Arthurs 1978; Birk 1979; Butler and Hoffman 1992; Michlovic 1987; Michlovic and Schneider 1993; Peterson 1986; Taylor 1997). The dates of sites with SLW range between about A.D. 1000 and 1750 (Birk 1979; Participants 1987) and vary amongst the different regions where it is found. Most of these are uncalibrated radiocarbon dates, although some are derived from thermoluminescence readings for SLW which are believed to be somewhat more accurate (e.g. Michlovic 1987). The recalibration of SLW radiocarbon dates has not been addressed in this thesis, as it would be a sizable research topic on its own.

**1.1.4 Cultural Affiliation.** Birk (1977a) proposed that SLW was part of a more inclusive culture and used the Ojibwa word *Wanikan*, meaning 'hole in the ground' or rice threshing pit, to identify it. Subsequently, Participants (1987) decided that the makers of SLW were probably Assiniboine/Siouan speakers because the regions were occupied later by historic groups of this cultural affiliation. Thus, Gibbon (1994:145-6) proposed the term *Psinomani* (pronounced "see-no-mon-nee") which is a Dakota (Siouan) word meaning 'wild rice gatherer'. This term refers to "a widespread archaeological complex that contains Sandy Lake ceramics and their associated artifacts and features in central Minnesota." It seems to have been accepted as more appropriate for the makers of SLW than *Wanikan*.

Across its large areal extent, SLW has been found in sites with many other contemporary archaeological cultures including: Selkirk composite and Duck Bay/Bird Lake complexes of the Rainy River composite from the Boreal Forest (Meyer and Hamilton 1994); Clam River focus (Cooper and Johnson 1964:474; Kolb 1988) from the Eastern Woodlands; Vickers focus (Nicholson 1991) from the Northeastern

Grasslands/Parkland; Northeastern Plains Village pottery (Michlovic and Swenson 1998); and Oneota phase (Michlovic and Schneider 1993) of the Northeastern Grasslands and Eastern Woodlands (Figures 1.3, 1.5). In addition, several pottery styles recovered in close proximity to SLW include that of the Blackduck horizon (Cooper and Johnson 1964:474; Meyer and Hamilton 1994) of the Boreal Forest/Eastern Woodlands, and Plains Village tradition (Lehmer 1971) pottery from the Grasslands. Most evidence indicates that Blackduck horizon pottery is earlier than SLW (Cooper and Johnson 1964; Meyer and Hamilton 1994; Lugenbeal 1978) in Minnesota and perhaps in other places. Wascana ware or Mortlach phase (Malainey 1991; Walde 1994) and Saskatchewan Basin complex (Byrne 1973) of the Northern Grasslands may be related pottery wares. Sandy Lake ware has also been found with some postcontact artifacts (Arthurs 1986; Peterson 1986). The relationships of SLW to these environmental zones and archaeological constructs, using detailed comparative artifact analysis, have not been systematically dealt with before.

## ***1.2 Rationale For This Thesis***

The problems with the identification of and the northwestern extent of SLW first became apparent to me while writing my honours thesis which was based on pottery found at the Duthie site in southwestern Manitoba (Nicholson and Burton-Coe 1992; Taylor 1994a, 1994b, 1995a, 1995b, 1996a). It differed from the Blackduck pottery in other collections from this region, yet resembled some Vickers focus materials outlined by Nicholson (1991). Descriptions of SLW and Northeastern Plains Village ware (group) in Minnesota seemed to most closely resemble the Duthie pottery (e.g. Michlovic 1988; Michlovic and Schneider 1993). Occurrences of likely SLW pottery in southern Manitoba and adjacent Saskatchewan had largely been ignored until then. The exceptions were: Mayer-Oakes (1970), who noted similar pottery at Site No. GRS-1 and Tailrace Bay on the northwest portion of Lake Winnipeg; Byrne (1973) mentioned the similarity between some Saskatchewan Basin pottery and SLW; and Nicholson (1990:42), who



Figure 1.5. Central North America with selected Late Precontact cultural entities in relation to *Psinomani*.

suggested that a few sherds with shell temper from the Lovstrom site might be SLW. Walde (1994) later suggested a relationship between SLW and the Mortlach phase. Thus, there was no general source of SLW research, other than Cooper and Johnson's (1964) defining article or Peterson's (1986) thesis. The latter provided few general details about SLW but many statistics about pottery from portions of two regions where it is found.

In terms of the need for new SLW research, several authors expressed their thoughts in this regard. As Arthurs (1978:62) so aptly stated about SLW studies: "Future research should be directed to the further delineation of its areal distribution, its stratigraphic and temporal relationships with Blackduck, Selkirk, and European cultures, and its affinities with certain similar pottery types in Minnesota and Manitoba . . . ." Walde (1994:147) also suggested that "there is a strong need to re-examine ceramic assemblages in southwestern Manitoba and south-central Saskatchewan and possibly to modify the western range of Sandy Lake ware." Furthermore, Peterson (1986:ii) stated that "a continuation of the study of Sandy Lake Ware, is deemed to be necessary in order to determine the parameters which most greatly effect [it]." Having recognized the need for this particular research, the author realized that more archaeological studies of southwestern Manitoba and southeastern Saskatchewan pottery are also required to develop even basic cultural historical models for this area (Table 1.1). Moreover, this area is an interface between several ecological zones, where different interactions likely took place, as is evident from the diverse pottery assemblages.

Given how important SLW is in the Late Woodland period, it is surprising that so little is understood about it (Peterson 1986). Descriptions range from merely mentioning that SLW was found in a regional survey to detailed descriptions of each vessel (e.g. Birk 1977b). Peterson (1986:7) commented about the tendency to define objects on the basis of a few attributes that has forced researchers to make the central but implicit assumption that Sandy Lake ware is a homogenous pottery category. Essentially, her point was that



**Table 1.1. Chronological overview of archaeological cultures in the late precontact in the general study area.**

<b>Culture/Pottery</b>	<b>Date Range</b>	<b>Source</b>
<i>Psinomani</i>	A.D. 1000-1750	Birk 1979:175
Vickers focus	A.D. 1400-1625	Nicholson and Hamilton 1997
Selkirk	A.D. 1100-postcontact	Meyer and Russell 1987:
Rainy River Composite (Duck Bay complex; Bird Lake complex)	A.D. 1000-1350 possibly 1650	Lenius and Olinyk 1990:85
Oneota	A.D. 900-1700	Anfinson 1997:144
Initial Middle Missouri	A.D. 900-1300 or 1400	Gibbon 1993:169-170
Extended Middle Missouri	A.D. 1100-1550	Gibbon 1993:169-170
Terminal Middle Missouri	A.D. 1550-1670	Gibbon 1993:169-170
Old Women's phase	A.D. 900-1350	Meyer and Epp 1990
Clam River focus	A.D. 700-1750	George 1979:67
Kathio series	A.D. 800-1200	Ready 1979b:103
Blackduck	possibly A.D. 500 A.D. 700-1000	Lenius and Olinyk 1990:82

better attribute lists were needed and that SLW may be more complicated than could be encompassed by just one ware. Her results indicated that in the Red River Valley and northwestern Minnesota region, there was little variation between the ware in these areas (Peterson 1986:177).

### ***1.3 Problems and Research Objectives***

Three problems arose from looking at the many references and pottery assemblages relating to SLW. These problems are:

1) The first uncertainty that the author identified was the classification of this ware and related Late Precontact/Postcontact wares across the vast area where it is found. An associated problem encountered was the tendency for some archaeologists to introduce new pottery classificatory terms when it was unnecessary to do so. Thus, pottery identical or similar to SLW would sometimes be called something else.

The goal, dealing with this problem, will be to sort out some classification problems with SLW and associated or similar pottery. Discussion of acceptable

attributes and the differences exhibited on SLW vessels from the western periphery will also be discussed.

2) The second problem of this thesis was to deal with the archaeological implications of SLW. There were many aspects to this problem such as: temporal and regional differences, origins, trade relationships, subsistence, associations, and fate of the people(s) who made it.

The goal in this portion of this project is to describe other artifacts and bone associated with SLW. Some environmental variables will also be dealt with. It is hoped that other aspects of the *Psinomani* culture will be discerned by the combining of information.

Another goal is to describe the apparent lifeways maintained by people who occupied the sites where SLW has been found and how they changed through time and space.

3) The northwestern extent of SLW was the third uncertainty addressed in this project. It had not been studied previously, other than in a cursory fashion by Participants (1987). A related problem is if there is an absence of shell tempering in SLW from the northwestern extent and the reason for this occurrence.

The goal dealing with this uncertainty is to form a current list of sites with SLW across its complete extent. Then, the northwestern extent will be defined after examining pottery from the study area and determining if it is SLW or not.

#### **1.4 Methods**

The following methods will be used to try to attain the previously outlined goals. An attribute list was devised to determine if a given sherd would fall within the variation of SLW or not, as outlined in the original description by Cooper and Johnson (1964) and subsequent publications about the ware. Rim, neck, and shoulder sherds as well as reconstructed vessels were examined. Some body sherds were also considered, particularly if they might be reconstructed. As they are most diagnostic, the following

attributes were studied: temper, thickness, surface finish, paste, profile, rim and lip shape, decorations, functional implications, and location of the find. An overview of remains associated with SLW such as projectile points, other stone tools, faunal remains, bone tools, general geographic region, and stratigraphy was also completed. By examining these additional artifacts and circumstances, it was hoped that more could be determined about the people who made the pottery, and how their movements affected their subsistence habits and lifeways. Photographs and/or drawings were made of important sherds or vessel reconstructions. Dates from SLW sites in the study area were investigated but not calibrated as stated previously.

**1.4.1 Theoretical Framework.** It is necessary for archaeologists to use one or more theoretical viewpoints when analyzing artifacts or addressing a problem. For this project, the author chose to use cultural historical theory, given that there were still problems that needed to be dealt with in SLW taxonomy. A cultural historical approach will be used in examining and evaluating collections in Saskatchewan as well as Manitoba, to try to determine if SLW would be present in collections other than those already documented. While this may not be a new or innovative viewpoint, the many uncertainties indicated by the literature review suggested that these problems should be dealt with. Recently, other researchers from the Northeastern Plains dealing with different pottery wares have produced similar studies using cultural historical theory as a basis (e.g. Malainey 1991; Paquin 1995; Walde 1994).

Willey and Phillips (1958:4, 5) pointed out that archaeology should basically remain related to cultural anthropology and that archaeologists should also operate on observational, descriptive and explanatory levels. They also explained the basis of using descriptive 'culture-historical integration' which "covers almost everything the archaeologist does in the way of organizing his [/her] primary data: 1)typology, taxonomy, formulation of archaeological 'units,' 2)investigation of their relationships in the contexts of function and natural environment, and 3)determination of their internal

dimensions and external relationships in space and time” (Willey and Phillips 1958:5; numbering added by the author). These three levels of operation were used while completing this project. Classificatory schemes are discussed in Chapter Four.

Although critical theory was not expressly used throughout the writing of this thesis, it was certainly considered and considered valuable. If the author disagreed with an idea, it was important to bear in mind that the discipline of archaeology is an ever changing one. In other words, a researcher’s views probably reflected the vantage point of the time that they were working in (Handsman and Leone 1989).

Within the study area, collections that likely contained SLW or similar pottery, from several repositories or locales, have been identified and examined (Table 1.2). The degree to which this was possible was limited due by several restrictions: time, finances, availability of repository management staff, and the presence of uncatalogued artifact collections.

## ***1.6 Summary***

A short introduction about SLW has been presented in this chapter. Then, the study area and rationale of this thesis project were explained. The problems, goals, and methods were also outlined.

Chapter Two provides an overview of the historic developments in SLW research and a discussion of the its essential attributes. It deals with classification, the first goal. Chapter Three deals with the second goal of cultural associations, while Chapter Four discusses classification controversies in similar and associated pottery. The fifth chapter is an overview of new or reclassified collections and sites which contain SLW in the study area and discusses the results of the new information presented in the previous section. This listing differs from Table 1.2, showing all collections that were examined by the author. Chapter Six provides a summary of this thesis. A glossary of terms, as used in this thesis, is presented in Appendix A.

**Table 1.2. List of collections examined during this project.**

REPOSITORIES AND SITE LOCATIONS	COLLECTIONS
<b>Brandon University</b> Department of Native Studies (Archaeology Section) Brandon, MB -southwestern MB	<i>Makotchi Ded Dontipi</i> Locale (sites: Bradshaw, Duthie, Gould, Jackson, Philips, Schuddemat, some Twin Fawn, some Vera); Brockington, Heron, Lewis 8-13-8, some Lovstrom, Lowton, NE1/4 29-13-18, Richards Village, Snyder Site surface, Stott
<b>Lake Superior Basin Workshops</b> International Falls, Minnesota (1997) Duluth, Minnesota (1998) -northern Minnesota	Collections were examined at the workshops at the Grand Mound Center and the University of Minnesota, Duluth campus.
<b>Manitoba Culture, Heritage, and Citizenship, Heritage Branch</b> Winnipeg, MB -southeastern, southwestern, central, MB	Aschkibokahn (central MB); Falcon Lake, Redsky, River Mouth, Wanipigow, and numerous other small find spots (southeastern MB); Stott (southwestern MB)
<b>Manitoba Museum of Man and Nature</b> Winnipeg, MB -various locations in MB, ON, SK, AB, and northern U.S.	All cabinets with numerous collections from central and southern MB as well as ON, SK, AB, and northern U.S.; other specific sites include: Brockington, Falcon Lake, The Forks, Lac du Bonnet, Lockport (& Russell Epp collection), Richards Village, Tulabi Falls (southeastern MB); Homer Davis (DjMf-6), and W.H. Rand collections, Snyder sites (southwestern MB); Stoney Beach Midden (SK); Big Sandy Lake, Minnesota vessel portions & photos; ~250 Peterson (1986) photos (MN)
<b>North and South Dakota Sites</b> -Tours of various interpretive centres, museums, and sites (1994)	Knife River, Huff, Double Ditch, and Mitchell villages, interpretative centres, and the North Dakota Museum were visited to learn about sites/artifacts from this area
<b>Oneota Conference</b> Iowa City, Iowa (1994) - Minnesota, Iowa, and adjacent states	Numerous collections brought by researchers and avocationalists were examined to learn about Oneota; some sherds from the Duthie site were compared to these collections
<b>Royal Saskatchewan Museum</b> Regina, SK -central and southeastern SK	Bill Richards, Bushfield West, Lozinsky (central SK); Mortlach (southeastern SK)
<b>University of Manitoba</b> Department of Anthropology Winnipeg, MB -southwestern MB	Chris Vicker's Collection from Lowton site (southwestern MB)
<b>University of Saskatchewan</b> Department of Anthropology and Archaeology Saskatoon, SK -central eastern and central SK	Goldsworthy (central eastern SK); Sherwin Campbell collection, Tschetter, Vigfusson Collection (central SK)
<b>Western Heritage Services Inc.</b> Saskatoon, SK -central and southeastern SK	Borden Bridge sites (central SK); Estevan Tipi rings (DgMr-152), Sanderson (southeastern SK)

## **CHAPTER TWO: REVIEW OF PREVIOUS RESEARCH AND ESSENTIAL ATTRIBUTES**

### ***2.1 Introduction***

The following section outlines historical developments in SLW classification and information, and it shows how significant attributes of this pottery became recognized in the archaeological literature. Also, the author attempted to bring together this information, in a useful manner, as it has not been summarized that thoroughly before. A more detailed discussion of taxonomic problems can be found in Chapter Three. Section 2.3 presents the attributes used in studying SLW.

### ***2.2 Historical Review***

Wilford (1955:136) was the first to recognize pottery, which he simply referred to as the Mille Lacs aspect an undifferentiated 'Woodland catchall', that was different from other wares such as Blackduck or Laurel typically found in Minnesota. He was also the first researcher to characterize this shell tempered pottery as more recent than Blackduck 'focus' pottery which he defined in 1945. Evans (1961:34, 53) followed Wilford's example and did not really categorize this 'undifferentiated' ware. Lugenbeal (1976:186) also vaguely referred to this pottery as being non-Laurel, non-Blackduck but that it was associated with Blackduck. Later, he discussed SLW, noting that it was not present at the Smith site which he studied (Lugenbeal 1976:630). It was largely ignored until Cooper and Johnson (1964) first defined SLW, which was named after Big Sandy Lake, in what was thought to be the centre of its distribution in Minnesota (Figure 2.1). They described this ware as being characterized by "thin, straight-rimmed pottery sherds with either grit

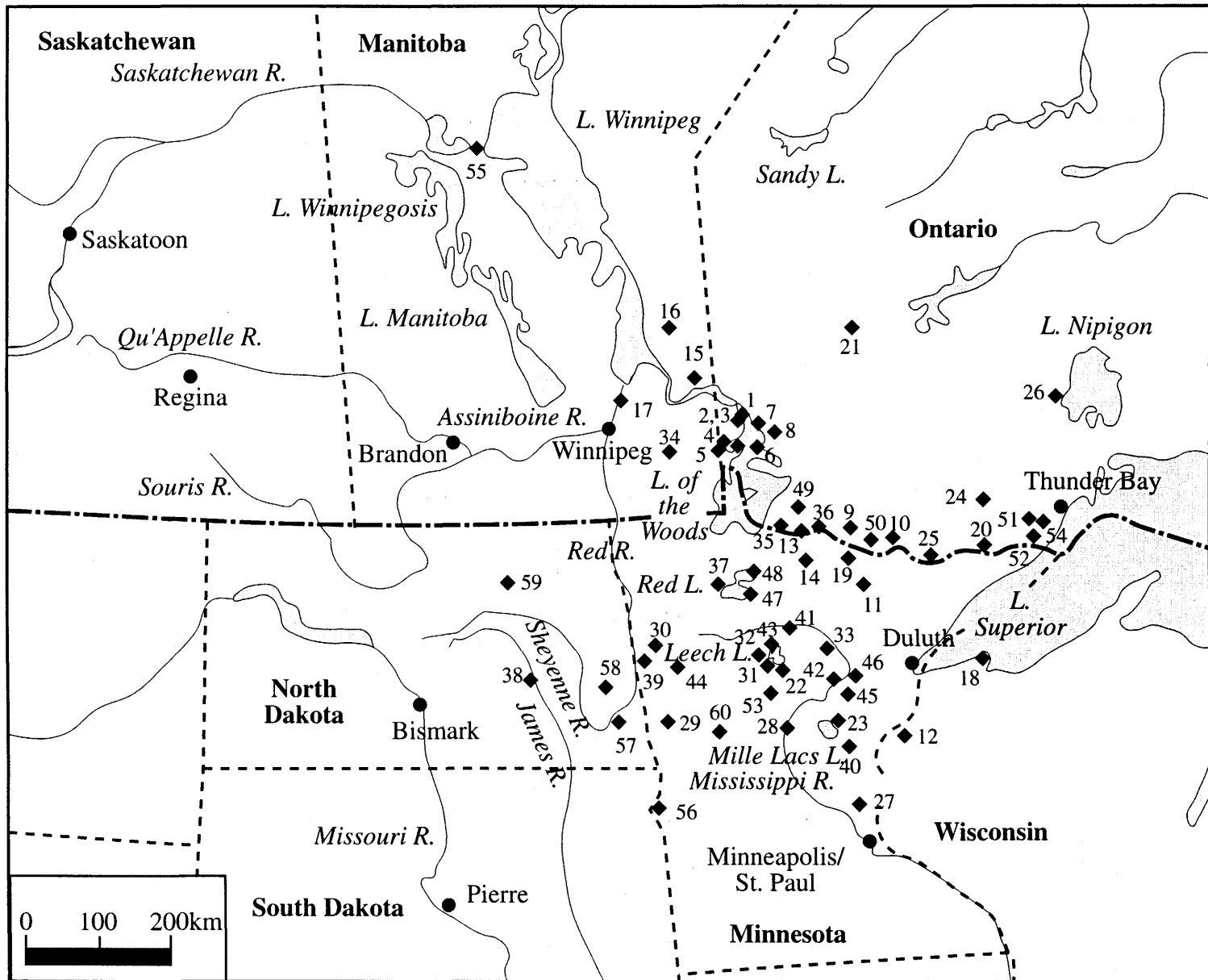


Figure 2.1. Sites with Sandy Lake ware (adapted from Arthurs 1978; Cooper and Johnson 1964:475; Participants 1987:58, Peterson 1986; etc.).

## Legend for Figure 2.1

1. Ballynacree	DkKp-8	40. Triangle Island	21KA29
2. Jeffrey	DkKr-3	41. Osufsen Mound	
3. Mud Portage	DkKr-4	42. White Oak Point	21ITI
4. Dungarvan	DjKq-11	43. Sucker Bay	
5. Ash Rapids East	DjKq-4	44. Mitchell Dam	21BK1
6. Spruce Point	DjKq-1	45. Miner's Point	
7. Mahon	DkKp-6	46. Battle Island	
8. Rushing River Pk	DkKn-1	47. 21BL05	
9. MacKenzie Island	DdKf-4	48. 21BL19	
10. Lady Rapids	DdKc-1	49. Pithers Point	
11. Big Rice	09-09-034	50. Oak Point Island	
12. Fickle		51. Kashabowie Lake	
13. Lehmann		52. Mound Island	DbJl-2
14. Little Fork Rapids		53. Norway Lake	21CA22
15. Tulabi Falls	EcKt-15	54. Martin-Bird	
16. Thunderbird	EcKt-15	55. Tailrace Bay	
16. Wanipigow	EgKx-1	56. Brown Valley	21TR5
17. Lockport	EaLf-1	57. Shultz	
18. Morty	47AS47	58. Shea	32CS101
19. Voyageurs National Park (8 sites)		59. Horner-Kane	32RY77
20. Quetico Park		60. Basswood Shores	21DL90
21. Potato Island			
22. Onigum Point	21CA138		
23. Kathio			
24. DfJo-6			
25. DcJv-1, DeJs-2, DaJu-2, DdJx-1, DaJu-3, DdJx-4, DbJx-1, DbJv-1, DbJt-1, DbJu-2, DbJx-2, DbJu-8, DhJc-1			
26. DfJf-1			
27. Interstate Park	21CH35		
28. 21MO21			
29. 21DL48			
30. 21NR09			
31. Steamboat	21CA27		
32. Creech	21CA14		
33. Scott	21CA01		
34. Falcon Lake	DkKt-7		
35. Long Sault	DdKm-1		
36. Houska Point			
37. Herberg	21CE28		
38. Jamestown Mound	32SN22		
39. Mooney	21NR29		



or shell temper. . . noticed in association with Blackduck habitation sites and seen in private collections in northern Minnesota for some time” (Cooper and Johnson 1964:474). Cooper and Johnson (1964:474) mainly used sherds from the Fickle (Kolb 1988) and Scott sites as well as the Osufsen mound to define this new ware. Wilford excavated the Scott site and Osufsen mound while Cooper excavated part of Fickle site, although Kolb (1988) stated that there were problems relocating some excavation areas and artifacts from where he had worked. Sherds from vertically cord-marked vessels were assigned to the Sandy Lake Corded type and those from smooth or obliterated vessels to the Sandy Lake Smooth type (Cooper and Johnson 1964:476). They also specified two decorative variants of the previously named types: plain and notched (Cooper and Johnson 1964:476). Later, Johnson (1985) proposed the Bradbury phase, which was elaborated on by Birk and Johnson (1992) as well as Birk (1992). This Mille Lacs Lake, Minnesota phase represented Mdewakanton material culture at the time of French contact, as represented by Sandy Lake ware, Ogechie series pottery, and Orr pottery (Birk and Johnson 1992:209). Thus, Wilford, Cooper, Johnson, and Birk have all contributed to the identification and description of SLW.

MacNeish (1958:162) predated Cooper and Johnson’s (1964) SLW article with an almost identical description of some southeastern Manitoba pottery which he named the Cemetery Point Corded type of the Manitoba focus (Rajnovich and Reid 1978:46). However, MacNeish (1958:162) wrote ambiguously that “unlike other types of this [Manitoba Corded] ware, these [vessels] rarely occur in the Manitoba focus but are common in the early stages of the Selkirk Focus.” Trotter (1973:52) even tentatively included Cemetery Point Corded under his SLW decoration types. Reid (1972:105) noted that 25 per cent of the Lowton site collection from southwestern Manitoba could be assigned to the Cemetery Point Corded or Alexander Fabric Impressed types. Although the original names of types or foci should be given precedence, SLW is now better established in the archaeological literature.

MacNeish (1958:172-173) also described shell tempered, cord-marked sherds, listed under “Manitoba aberrant sherds”, which he associated with the Selkirk focus, and attributed to trading relationships. Regarding these aberrant sherds, Cooper and Johnson (1964:479) suggested that they “appear to be Sandy Lake, and in this Manitoba context they are associated with a focus which in part is protohistoric and is later in time than the Blackduck and Manitoba Foci.” Thus, Cooper and Johnson (1964) were the first researchers to indicate that SLW was present in some parts of Manitoba, although they should have noted the similarities to MacNeish’s (1958) Cemetery Point Corded type, which was already published.

It has also been noticed that there are similarities between SLW and the earlier defined Lisbon Tool Impressed type of Lisbon Flared Rim ware in the Stutsman Focus (Wood 1963), which is found in the Middle Missouri subarea or Northeastern Plains Villages (Michlovic and Schneider 1993; Michlovic and Swenson 1998). Michlovic and Swenson (1998:16) suggested that this type be dropped from general usage since virtually all archaeologists, especially those in the United States, now use the term SLW as described by Cooper and Johnson (1964).

Mayer-Oakes (1970:197) was the first to identify SLW in central Manitoba at the Tailrace Bay site in the Grand Rapids Reservoir survey region. He (Mayer-Oakes 1970:14) also indicated a similarity between some sherds from Site No. GRS-1 in the same region. Although the number of archaeological research projects in this region have been few, his idea of SLW being present this far northwest has largely been ignored until the present project.

Trottier (1973) divided the SLW at the Falcon Lake site in southeastern Manitoba into six decoration types, although these do not differ from the original descriptions by Cooper and Johnson (1964). His types A to F are just more specific versions and do not include the Smooth type. However, he was the first researcher to categorize SLW in eastern Manitoba.

Koezur and Wright (1976:19), when describing pottery from the Potato Island site, were the first researchers to identify SLW in northwestern Ontario. Unfortunately, they only identified one vessel of this affiliation (Vessel 2 from the miscellaneous vessel section).

Lugenbeal's (1976) lengthy dissertation about the Smith site in Minnesota, as well as other Laurel and Blackduck collections, is useful in that he discussed some aspects of SLW. He also dealt with the Rainy River and northern Minnesota areas where SLW is found.

Gibbon (1976, 1994; Gibbon and Caine 1980) has made a considerable contribution to the study of SLW and other Minnesota based archaeological manifestations. He also introduced the Dakota term *Psinomani* (Gibbon 1994:146) as a replacement term for the culture that includes SLW. His detailed report about the Old Shakopee Bridge site (Gibbon 1976) also helped add to the information known about SLW and precontact wild rice harvesting, as inferred from features found there.

Birk (1977a, 1977b, 1979) has also provided some new ideas dealing with SLW. In particular, he attempted to discover more information regarding sites and artifacts associated with SLW. On the basis of his Minnesota sample he introduced a Stamped type, which included simple and checked stamped vessels, in addition to the previously named Smooth and Corded types (Birk 1979). He (Birk 1977a, 1979) was also the first person to suggest that SLW was part of an archaeological culture called *Wanikan*, which is discussed in more detail in Chapter Three. Birk's (1992; Birk and Johnson 1992) interest in protocontact and French contact times in Minnesota has added to information known about SLW and groups inhabiting Minnesota at that time.

Arthurs (1978) completed the first Canadian regional, rather than site based, study of SLW. He noted that the northwestern Ontario SLW sample that he examined exhibited attributes which differed from southern (or U.S.A.) examples, such as: only containing grit temper, exterior punctates encircling the necks of some pots, some

excurvate as opposed to incurvate profiles, and an absence of the Smooth type (Arthurs 1978:59, 62). Arthurs (1978:59) also noted that there were at least four different forms of lip notching found in his Ontario samples including sharp-edged, ribbed curved-end, blunt cylindrical, and smooth curved-end objects. Although he did not explicitly state so in his article, essentially Arthurs (1978) defined the first regional variant of SLW. He (Arthurs 1986) also provided a useful synthesis of the Long Sault site which contained SLW associated with a late <sup>14</sup>C date.

Peterson (1986) completed a Master's thesis mainly concerning SLW, which included a formal attribute analysis of relatively large SLW samples from Woodland and Grassland sites in northern Minnesota. Her literature review was fairly short and she focussed instead on statistical analyses of several SLW collections. At the most basic level she identified a typical SLW vessel as having shell temper, a textured exterior, and cut notched (meaning the clay was actually cut out) lip decorations (Peterson 1986). Her main conclusions can be summarized as follows:

- There was not significant variation between the samples from the lake-forest region of Minnesota and the Northeastern Grasslands samples (Peterson 1986:177).

- However, some variations such as interior neck forms, cut notched lip forms, lip surface treatment, and interior decoration application might be temporal indicators (Peterson 1986:178). There may have been an increased preference for ridged interior neck forms, cut notching, dowel impressions, and smoothed lip surface treatment through time (Peterson 1986:174).

- Temper is an important attribute within SLW (Peterson 1986:170, 177), and this is a better one to divide the ware rather than surface finish as Cooper and Johnson (1964) had done. The ware should be subdivided into Sandy Lake Grit Temper and Sandy Lake Shell Temper types although those with both kinds are included

in the latter type. These two types should be subdivided into the different surface finishes found on SLW (Peterson 1986:171).

-Neck and exterior decorations (occurring in less than five per cent of possibilities) are acceptable SLW attributes, although lip only and interior only are the most common decorative portions (Peterson 1986:172).

-The decorative approaches listed by Cooper and Johnson (1964) and Arthurs (1978) are included along with even more options.

Thus, Peterson's (1986) thesis contributed some interesting new ideas about SLW, although unfortunately, few researchers seem to have used this information.

Michlovic (1982, 1983, 1985, 1987, 1988) and Schneider (1982) made a significant contribution to the study of SLW, including the description of the interesting fortified Shea site (Michlovic and Schneider 1988, 1993). Schneider's (1982:119-120) often cited synthesis of archaeology along the upper James River Valley in eastern North Dakota also included a description of a vessel identified as a SLW/late Blackduck syncretism from the Beeber site, although Snortland-Coles (1985:5.38) and the author believe that it is probably SLW. This vessel was one of the first examples of SLW recognized in North Dakota and Schneider (1982:121) suggested that it dated from about A.D. 1000-1300. Michlovic's ideas about the Red River Valley in eastern Dakota have clearly added to interpretations about that portion of Minnesota where much SLW is found. Michlovic and Swenson's (1998) interpretations about Northeastern Plains Village pottery have simplified the 'cluttered' literature for this region.

In 1988, the annual Lake Superior Basin Workshop was held in Kenora, Ontario. One of the main topics at this meeting was Sandy Lake ware and its distribution. This resulted in the much disseminated article by participants of the Lake Superior Basin Workshop (Participants 1987) which compiled results of discussions at the meeting and provided a list of SLW sites. Of particular importance was the cooperation between Canadian and U.S. archaeologists to provide a more complete view of this ware.

**2.2.1 Southwestern Manitoba.** The most recent identifications of SLW were made in southern Manitoba, although Vickers (1948) noted general similarities between southern Manitoba and Minnesota pottery. Since some of this information is not widely disseminated, this section provides a historical review of research involving this ware. Michlovic (1987:53) was the first researcher to note the possible presence of SLW in southwestern Manitoba, specifically for an early time frame for this ware: “The Snyder Dam ceramics are dated to about A.D. 1200, well within the proposed chronological range of Sandy Lake. . . . Whether or not this impugns the integrity of the Snyder Dam ceramics, their similarity to Sandy Lake is apparent” (Michlovic 1987:53). Apparently, this idea has never been evaluated, although the Snyder Dam vessels have also been noted as being similar to Ash Rapids Corded pottery (Reid and Rajnovich 1980:81) and more recently to Hannaford ware (Hohman-Caine and Goltz 1998). Next, Nicholson (1990:42) suggested that a few shell tempered sherds from the Lovstrom site could be SLW. Nicholson (1991) later suggested that his Vickers focus classification, which represented several sites dating to the late precontact period in southwestern Manitoba, included some SLW vessels along with other wares originating from Minnesota and the Middle Missouri subarea. The Lowton site, considered the type site for the Vickers focus, has some SLW (Nicholson 1991; Pankratz 1996; Hartlen 1996a:23) and several shell tempered vessels (Nicholson 1991; Reid 1972); see Chapter Five for a discussion of these vessels. Thus, several SLW vessels in southern Manitoba have recently been identified which enlarged the distribution farther northwest.

The author was the first to identify individual SLW vessels in southwestern Manitoba at the Duthie site (Taylor 1994a, 1996a), although Nicholson (1988) stated generally that SLW was present in some sites in southwestern Manitoba. Most sites in this part of the province that have been occupied within a similar time period as the Duthie site were Blackduck occupations or had predominantly textile (a.k.a. fabric) impressed pottery which is not SLW (e.g. MacNeish 1954; Playford 1994; Taylor 1992, 1996b;

Tisdale 1978, etc.). The single radiocarbon sample from the Duthie site was assessed at 880±80 years B.P. (Beta 62705). However, this sample was obtained from material that was not associated with SLW. While trying to find the closest type to the anomalous, mainly smooth-surfaced pottery at the Duthie site, it was noted that pottery from the Shea site in North Dakota (Michlovic and Schneider 1993) and the nearby Snyder sites in southwestern Manitoba (Dudley n.d.; Syms 1974, 1979a) had the closest resemblances. Further research led the author (Taylor 1994a) to consider that most of the Duthie pottery was either SLW (Cooper and Johnson 1964), Northeastern Plains Village ware (Michlovic and Schneider 1993), or Initial Middle Missouri variant (Lehmer 1971). Later, Pankratz (1996:66) observed that vessels 2 and 3 from the Bradshaw site, which is located about 1.5 km away from the Duthie site, also had “a strong resemblance to Sandy Lake Ware” although she considered them closer to the Early variant of Saskatchewan Basin pottery (see Section 5.4.5). Hartlen (1996a, 1996b) noted the presence of a few SLW vessels in the Randall Collection which he classified as being part of the Vickers focus. The Randall materials originated from several surface collected sites in the Killarney, southwestern Manitoba locality. Of related importance is Walde’s (1994:146-147) suggestion that SLW is ancestral to some Mortlach pottery in Saskatchewan, Alberta, and southwestern Manitoba. Several researchers (Dyck and Morlan 1995:193; Malainey 1995b) have also indicated similarities between SLW and Wascana ware in Saskatchewan, which will be discussed in Chapter Four.

Thus, from the findings and ideas of various researchers across a large area, a basic outline of SLW has emerged over several decades. Continuing from Wilford’s (1945) work through to contemporary research in southwestern Manitoba, Saskatchewan, and eastern North Dakota, archaeologists have recognized pottery which resembles SLW, even though sometimes it has not been named as such. The following section summarizes information about various attributes associated with the ware, and those characteristics which differentiate it from others.

## 2.3 Attributes

An attribute is the smallest unit of analysis in most pottery studies and each one can have two or more states; it may be natural (e.g. hardness) or intuitive (e.g. motif) (Anfinson 1979:219). A general definition of what each attribute is and details about SLW attributes are presented in the following sections. These physical descriptions mainly rely on data gathered by examining the specimens with or without a microscope. There have been few chemical or mineralogical studies of SLW, although one exception is the work of Burns (1994) who examined the mineralogy of one SLW vessel from the Tulabi Falls site in southeastern Manitoba. This lack of geological analyses is not surprising as the procedures are expensive, few archaeologists are trained in these procedures, and they do not usually have access to the equipment. Studies of this nature would be beneficial to furthering what is known about SLW. Although the author has the geologic background for such a study, the sample size of SLW is quite small in the study area, and funds are limited.

**2.3.1 Profile.** The profile (a.k.a. form) refers to the general shape in cross-section of the vessel, from rim to base, or a portion of a pot (Anfinson 1979:221). Since most examples of pottery are small fragments, the full profile may not be seen in some sherds or reconstructions. The uppermost portion of a vessel is called the lip and its flat surface is sometimes referred to as the brim. A rim is the part of a pot which is just below and including the lip. It is typically although not necessarily decorated (Anfinson 1979:223). The neck of a vessel typically constricts at some point below the rim, while shoulders often expand. Lastly, the bottom of a pot is called the base.

Sandy Lake ware vessels are globular and tend to be relatively squat. Given the bowl shape of SLW vessels (Figure 1.4), orifices tend to be quite wide when compared to the body (Cooper and Johnson 1964). Rim shapes are generally straight (e.g. Figure 2.2, A1) but some are incurved (e.g. Figure 2.2, A8) or outflaring (e.g. Figure 2.2, C12) (Birk 1979; Gibbon 1994:146; Peterson 1986). Straight rims are also referred to as vertical and



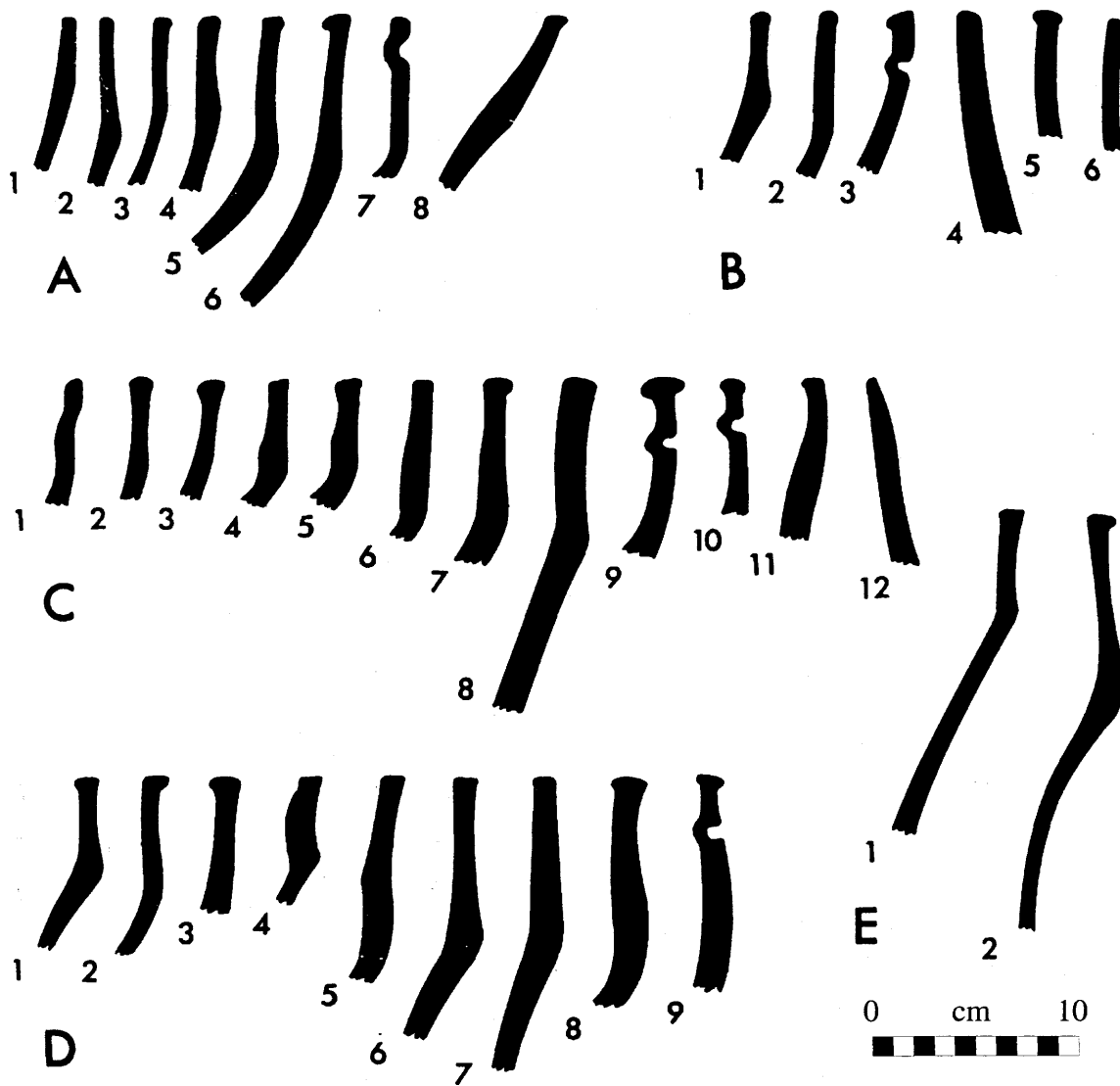


Figure 2.2. Sandy Lake ware rim profiles from several sites in the U.S.: A) Battle Island (Big Sandy Lake); B) Miner's Point (Big Sandy Lake); C) White Oak Point (Mississippi River); D) Scott (Mud Lake); and E) Fickle (Clam River, Wisconsin). Modified after Cooper and Johnson (1964:476, Figure 2). It is presumed that the exterior of vessels are on the left.

are defined as being straight in cross section whether they are inverted, everted, or vertical (Anfinson 1979:224, 225). The nature of the rim and body junction is poorly known or variable within SLW (Arthurs 1978; Gibbon 1976; Peterson 1986). However, Birk (1979) suggested that rim/body junctions do not usually form an abrupt angle, although this area may have a prominent thickening (Figure 2.2:A5). Cooper and Johnson (1964) suggested that this feature is caused by the use of a paddle on the exterior and an anvil on the interior. Some incipient s-shaped, slightly incurved or outcurved rim shapes are also included in the SLW classification (Peterson 1986). Arthurs (1978) noted that some of the SLW vessels from Ontario had an excurvate rim profile. Sandy Lake ware is characterized by thin to very thin walls, usually ranging from 3.0-7.0 mm, and incipient S rims have a slight concavity from the interior lip to the neck (Cooper and Johnson 1964). Most pots are characterized by very slight to no shoulders (Cooper and Johnson 1964) and a rounded base.

**2.3.2 Lip Shape.** The top of the rim, or boundary of the orifice (Anfinson 1979:222), is known as the lip (Figure 1.4). This attribute (a.k.a. lip form) refers to the shape, in cross section (Anfinson 1979:222), of this part of the vessel (Figure 2.2). Most SLW vessels are not thickened at the lip, and are usually flattened and undecorated (e.g. Figure 2.2:A2) (Cooper and Johnson 1964). Peterson (1986:Appendix 4) noted that 75 per cent of SLW rims in her sample were of even thickness with the neck of the vessel, while 18.9 per cent were thicker at the neck, and 5.9 per cent were thicker at the lip. The lips of SLW may exhibit a variety of cross sections as exhibited in Figure 2.2: bevelled out (C3), bevelled in (C7), square (C6), T-shaped (D9), L-shaped interior (D2), L-shaped exterior, splayed, and bevelled out L-shaped (Peterson 1986:41). Lip shape may also be rounded (B1) and pointed (C12) in cross section according to Peterson (1986). Given that Laurel pottery is known to have pointed lip forms, researchers should be hesitant about categorizing small, smoothed rims with this lip shape as SLW. After attribute analysis, Peterson (1986: 80) concluded that only square (combined with all other

possibilities above into Flattened) and rounded (combined with pointed into the category Not Flattened) shapes were significant, although the former was overall more commonly found on SLW.

**2.3.3 Neck Shape and Neck Interior Shape.** Neck shape refers to the portion between the rim and shoulder (Figures 1.4, 2.2). According to Cooper and Johnson (1964), a 'rib like' thickening occurs on the interior neck of SLW vessels (Figures 2.2). Based on Budak's (1991) work, Romano (1992:35) suggested that this particular neck thickening could have been caused by the joining of first and second stage pottery manufacturing. Some of the vessels in Figure 2.2 (e.g. C7) exhibit this trait although some do not even have a clearly defined neck. Gibbon (1994:146) noted that SLW vessels sometimes have only slight neck constrictions. Angular neck shapes (Figure 2.2:D6) are considered to be those that indicate a slight angle of separation between the rim and body as indicated on the exterior and interior (Peterson 1986:44). This form along with rolled (a definite angle separates the rim and body of the vessel as in Figure 2.2:E1), and no neck (vessel contains no true rim; lip ends where body begins) are considered to be significant attributes of SLW by Peterson (1986:44). Peterson (1986:44, 46, 136) excluded vessels with the straight (exterior rim cannot be determined from the body but can be distinguished from the interior as in Figure 2.2:A2) and braced (a thickening along the rim/body junction or the rib-like thickening) shapes from her analysis as they were found on less than five per cent of vessels. However, it is clear that this thickening occurs on some sherds (Figure 2.2).

Peterson (1986:81) described several interior neck forms including the most common curved (Figure 2.2:D2), pointed (a clear separation between the rim and body is apparent as in Figure 2.3:bottom left), ridged (a ridge appears on this separation something like Figure 2.2:B1), and faceted (more than one ridge is apparent). Faceted shapes, which numbered less than five per cent in her sample, were combined into those with pointed neck interior forms and renamed as 'ridged' (Peterson 1986:81).

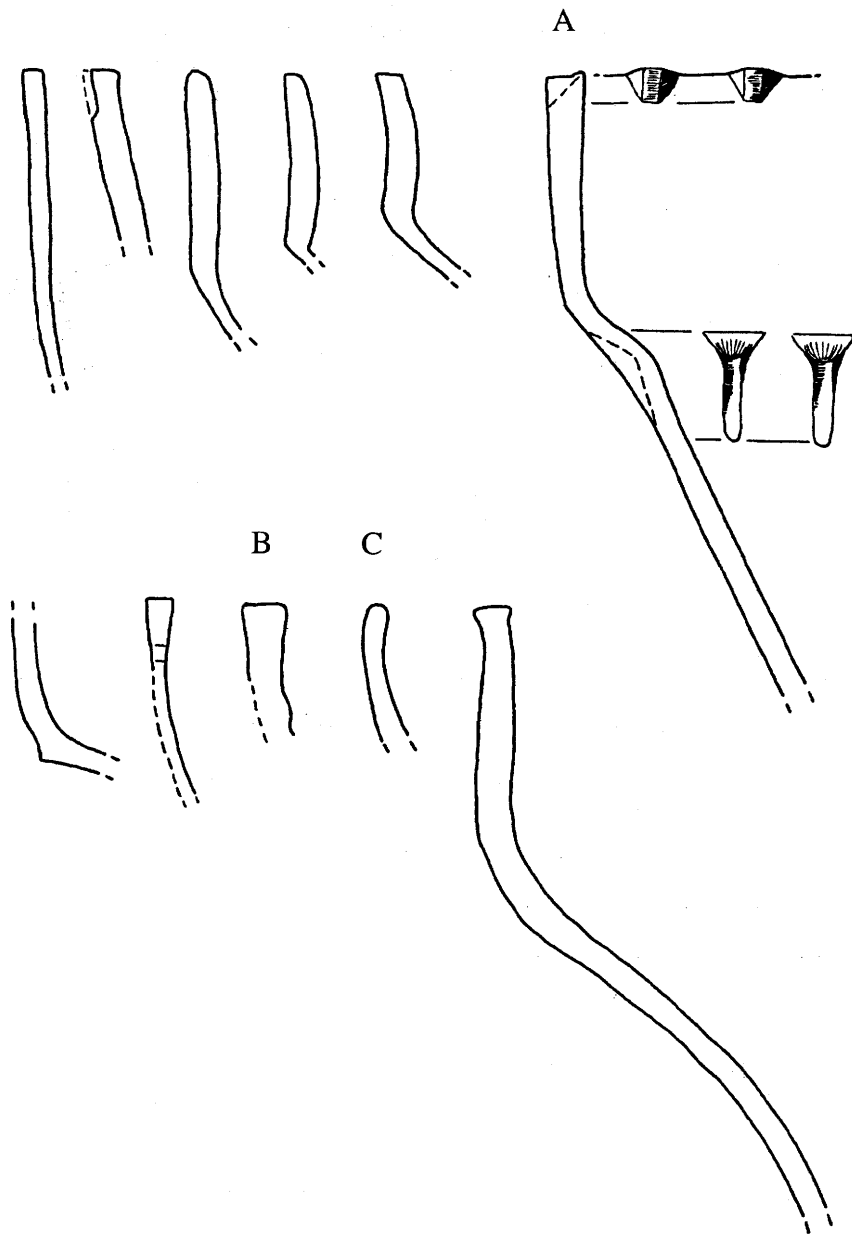


Figure 2.3. Several typical Sandy Lake ware vessel profiles, showing lip shapes, from the Norway Lake site habitation area (modified from Birk 1977a:45). Note the interior shoulder notching on A and that B)Blackduck rim and C)Ogechie Series rim sherd are different in lip shape.

**2.3.4 Shoulder, Body, and Base.** The shoulder of a globular pottery vessel is typically the widest portion, while the body or main portion of the pot, meets the base or bottom (Figures 1.4, 2.3). Basal sherds are usually more curvilinear and thicker than other body sherds (Anfinson 1979:219) (Figure 2.4). Sandy Lake ware vessels are globular (Cooper and Johnson 1964) as is typical of other Late Woodland pots. Arthurs (1978) noted that the neck/shoulder junction of SLW vessels is poorly defined, although in profile, it is noticeably thickened (Figure 2.2:E2). Most of the reconstructed vessels from which this information comes from Minnesota, often from mound burials (e.g. Osufsen Mound in Cooper and Johnson 1964). Shoulders of SLW pots tend to be almost nonexistent (Cooper and Johnson 1964), in that profiles are often very straight. However, when present, shoulders are usually rounded, although Justin and Schuster (1994:81) noted one SLW vessel in Minnesota with an angular shoulder. Given the shapes of these pots and other Late Woodland manifestations, it is likely that most SLW had a rounded base which may have been slightly thicker.

**2.3.5 Paste, Manufacture, and Usage.** Paste refers to the mixture of deliberately added particles, known as temper, and clay which forms the vessel. The paste is influenced by the grain size, shape and amount of temper present (Anfinson 1979:223) and also by natural particles found in the clay. It is governed by the general appearance of fired clay, in terms of it being laminated (seen in layers), coarse, medium or fine textured (Figure 2.5). Natural and deliberately added particles, called temper, influence the paste of a vessel. Most SLW vessels have laminated pastes (Gibbon 1994:146) but there is also a tendency for them to have a fine, compact paste (Cooper and Johnson 1964:475). These vessels were likely manufactured in a textile bag, since this structure would support the vessel and enable thin walls to be formed (Goltz 1991). The hardness of SLW sherds is usually 2.0 to 3.0 (Cooper and Johnson 1964:475), based on the Moh's scale of 1.0 being the softest (talc) and 10.0 being the diamond. In other words, SLW is typically quite soft.

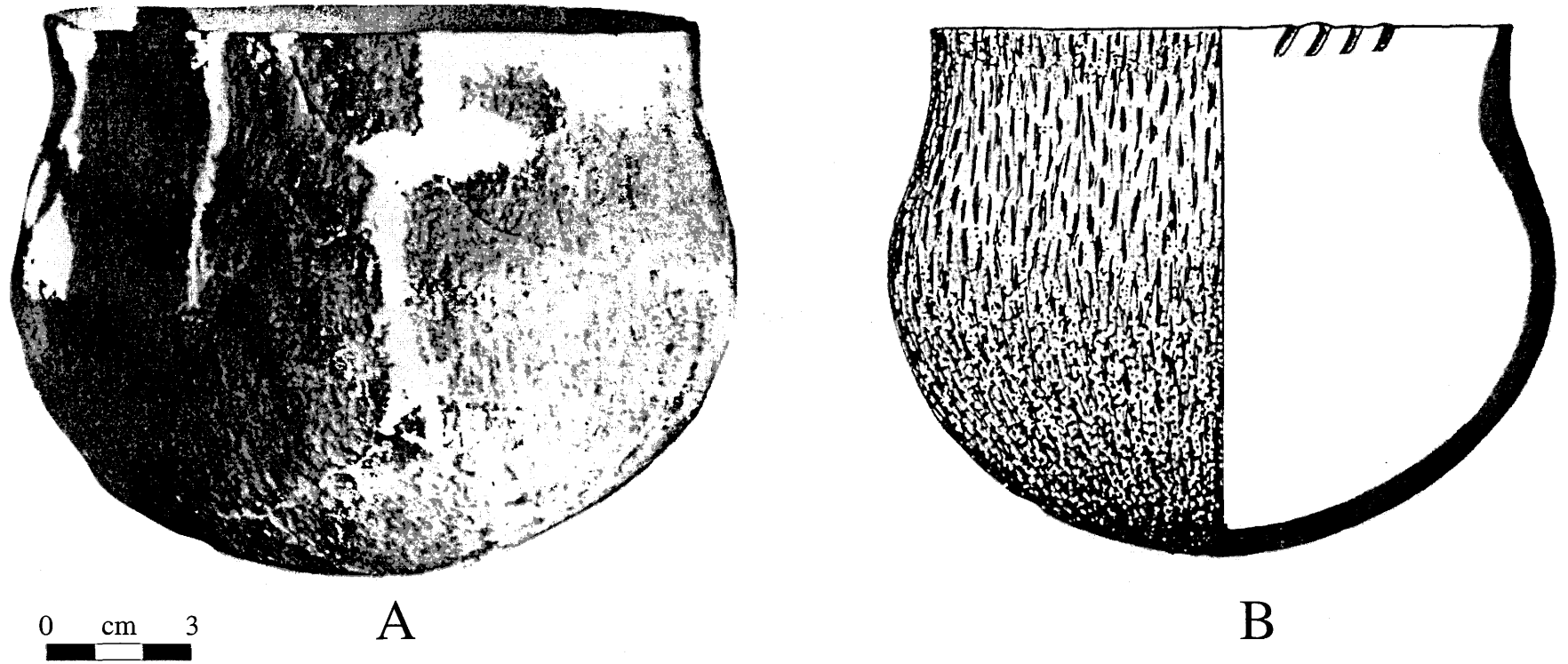


Figure 2.4. Mortuary vessel #1 from the Norway Lake site in Minnesota with typical Sandy Lake ware attributes - A)reconstructed pot; B)artist's rendition (modified from Birk 1977a:43).

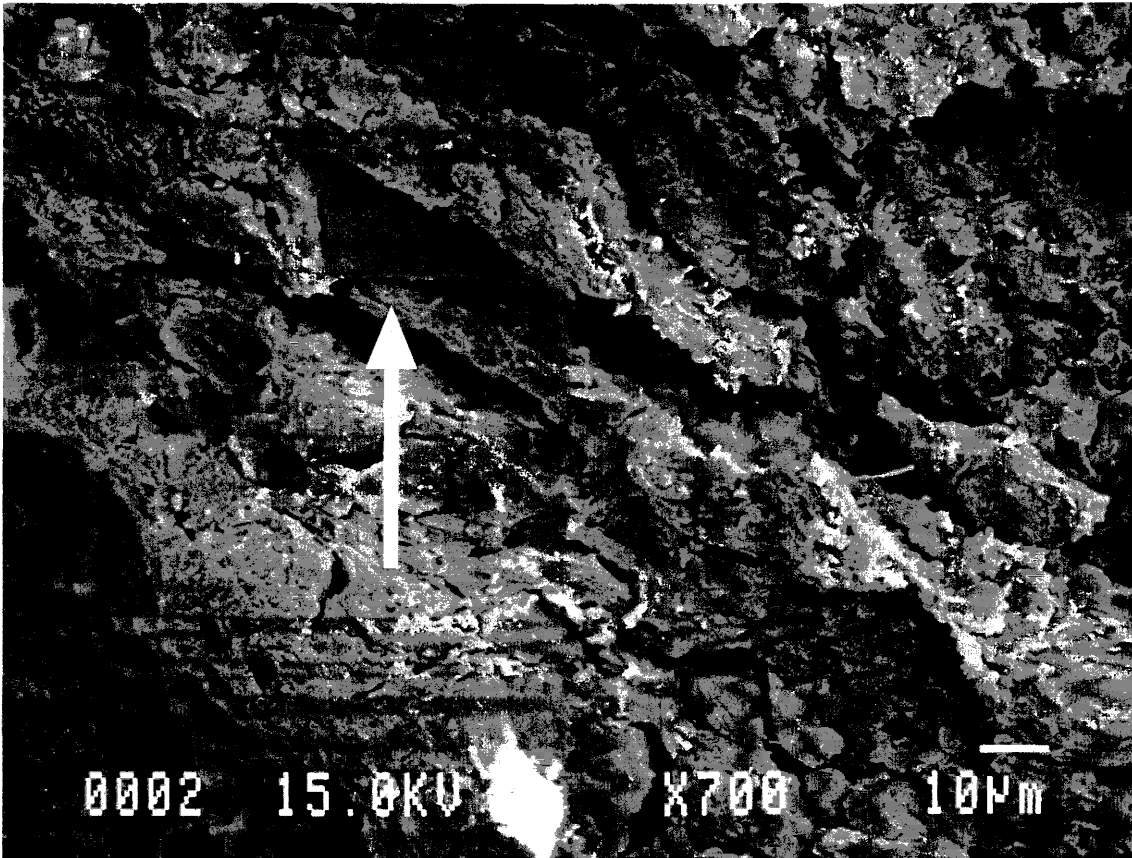


Figure 2.5. Scanning electron microphotograph from a laminated Sandy Lake Smoothed sherd (#S-102) from the Duthie site, southwestern Manitoba. The arrow points to a piece of grit temper.

The primary requirement for building pottery vessels is obviously clay, which could be obtained by digging near certain water bodies or a known source. There are many different clay minerals such as illite, smectite, and kaolinite, all of which are hydrous silicates (Deer et al. 1989:255-269). Detailed discussions of clay minerals are found in Boggs (1987:193-194) and Deer et al. (1989:250-274). Clay also refers to the smallest particle size (0.00006-0.0020 mm) in the Udden-Wentworth sedimentology scale (Boggs 1987:107). After roots or other unwanted items were removed from the clay, the material would be kneaded in water until workable (Budak 1985). Temper, which is an aplastic additive to reduce shrinking, would be added at this time if necessary. Michael Budak's (1991:54) experiments with vessel replication indicated that shell tempered pots were more water impermeable than grit tempered ones. He (Budak 1991:53) also noted that shell tempered vessels are more difficult to make and fire. It is a time consuming task to obtain shell, burn it, and grind it before mixing into the clay (Budak 1991:53). After any vessel is manufactured, it must be left to dry for several days. Generally, it is necessary to be dried out completely because water left in the clay would create steam and explode when the vessel is fired. Successful firing depended on weather conditions, the quality of clay and fuel, as well as manufacturing caliber (Shepard 1974).

Few studies have been completed regarding clay sources of Boreal Forest, Northeastern Grasslands, or Eastern Woodland pottery (except Brandzin 1994; Hanna 1982, 1984), particularly for SLW. An appropriate site for a provenance study would be the Thunderbird site in southeastern Manitoba where a clay filled basin feature was found with associated SLW and Laurel sherds (Carmichael 1979:82-83, 88-89). This feature may have been used for obtaining clay to make pottery (Carmichael 1979) and the possible indication that more than one group used this source, as evident from the recovered sherds, is interesting.

Michlovic (1987:52) studied x-ray diffraction (Shields 1983 in Peterson 1986), x-ray fluorescence, and petrographic microscopy of two SLW sherds from the Mooney site



in Minnesota; one pot sherd was cord marked, grit tempered and the other was shell tempered. He undertook petrographic descriptions of thin sections and x-ray diffraction was performed on five rim sherds of identifiable type, although limited results were published. The results indicated that the temper of one type, Sandy Lake Smooth with cord wrapped object impression decoration, had large very colourful grains that contrasted with the surrounding matrix (a.k.a. aphanitic) (Michlovic 1987:52). In other words, the potter apparently used a special kind of temper that would appear more visually appealing. Further discussion of these results, involving shell temper, can be found in Section 2.3.6.1.

Burns (1994) studied sherds from the Tulabi Falls (EcKt-15) site in southeastern Manitoba and one of her samples was SLW (see Section 5.3.4). The rest of the sample consisted of two Laurel, seven Bird Lake Stamped, 10 Winnipeg River, and one Duck Bay Stamp type sherd. She concluded that the SLW sample had different mineralogy and differed technologically from the other Bird River region vessels, although it was the only shell tempered sherd examined (Burns 1994:142, 143). Burns (1994:136) noted a higher level of calcite in this sherd; the addition of shell (calcium carbonate or  $\text{CaCO}_3$ ) would cause chemical changes compared to non-shell tempered sherds. The other samples indicated similar choices of temper, amounts of aplastic inclusions, probable local clay usage, and similar temper angularity (Burns 1994:143). It is interesting that after x-ray diffraction results were obtained for a Duck Bay Stamp vessel portion, Burns (1994) did not find apatite, likely associated with crushed bone temper being added, as Hanna (1982) had determined from some sherds recovered at the Aschkibokahn site. Future studies may help to reveal the mineralogy of SLW vessels and perhaps lead to a better understanding of clay sources.

**2.3.5.1 Manufacturing.** There are basically a few methods of making a pottery vessel including: wheel throwing (Rye 1981); pinching out the shape with fingers; building up coils of clay (Budak 1985); paddling the exterior while holding an anvil

(usually a smooth pebble) inside; molding on another vessel, or partial pot (Hanna 1983); using a rawhide mold or hole in the ground (Simon 1979); or textile bag molding (Wedel 1957). Of course, some combinations of the above list are possible. Goltz (1991), a Minnesota archaeologist, experiments with textile technology and traditional vessel manufacturing. Budak (1985), another replicator, showed that some precontact vessels were built in several successive stages rather than all at once.

Sometimes it is difficult to identify all of the possible production methods when small sherds, particularly from the body section, are all that have been recovered. Cooper and Johnson (1964:475) also noted that many SLW sherds were exfoliated. It is more difficult to detect how pots were manufactured when this happens. Exfoliation may have occurred as a result of patching during manufacturing, extreme thinness of the vessels, insufficient drying time, or a myriad of poor firing conditions. Shepard (1974:213-224) has discussed this subject in detail.

Regarding the manufacture of SLW by late precontact peoples, there were no wheel manufactured vessels, as this is an Old World pottery technology. There is no evidence of coil made SLW vessels in the form of the resulting distinctive, rounded breakage pattern seen in sherds (Arthurs 1986; Budak 1985). Molding and finger pinching could have been done, although the latter method usually results in an uneven, lumpy vessel. Some miniature vessels were made this way. Rye (1981:91) noted that a parting agent, such as textile, grease, sand or ash, would be necessary for removing pots from a mold. Hanna (1983) suggested that a textile impression could be left behind during this process. Since SLW vessels are typically very thin, generally have compact and laminated pastes, and interior anvil depressions have been found on pots, it is possible that the paddle and anvil method was used to manufacture them (Cooper and Johnson 1964:477). Particularly, the Corded type of SLW could have been made using a cord wrapped paddle on the exterior. However, the typical parallel vertical textile impressions (Figures 2.6, 2.7) were probably applied while making a vessel in a textile bag (Goltz



cm



Figure 2.6. Partially reconstructed Sandy Lake ware vessel from Jamestown Mound (Site 32SN22), North Dakota (adapted from Snortland-Coles 1985:5.14). Note the evidence of textile bag manufacturing (same vessel as Figure 2.7).

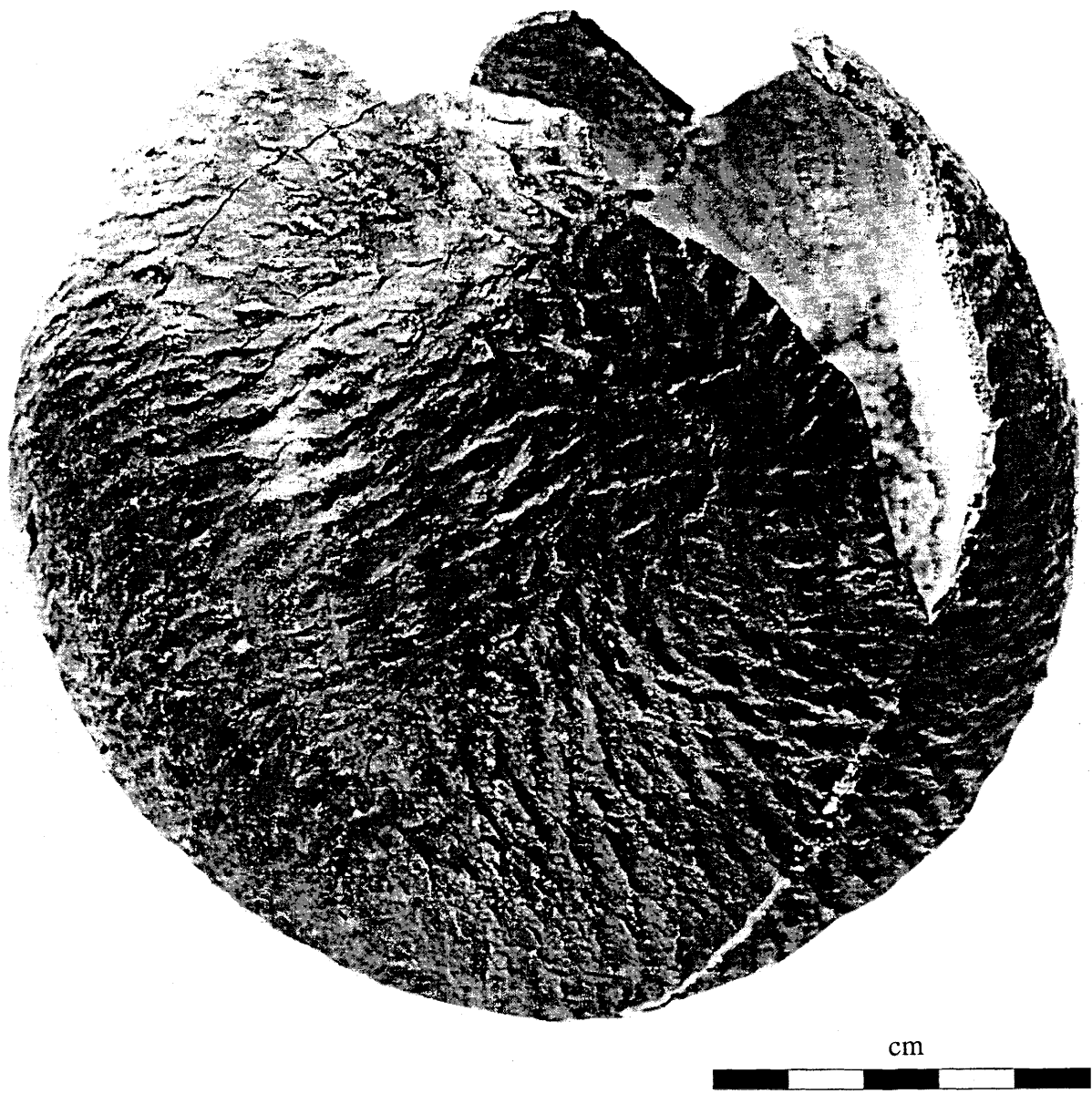


Figure 2.7. Partially reconstructed Sandy Lake ware vessel base, from Jamestown Mound (Site 32SN22) in North Dakota, showing evidence of manufacture in textile bag (adapted from Snortland-Coles 1985:5.15).

1991), and this may account even better for the extreme thinness of some vessels (Arthurs 1979:32). Goltz (1991:1) proposed that except for Laurel and for some forms of Sandy Lake ware (i.e. Smooth and Stamped types), all Woodland pottery was made in woven textile molds. In this regard, Snortland-Coles (1979) noted that clay could be smeared over the interior of the bag to make the pot (e.g. Figures 2.6, 2.7). All of the vessels from the Wanipigow site, studied by Saylor (1978a:51), had laminated pastes, as do many SLW vessels (Cooper and Johnson 1964). He suggested that this type of paste resulted from the clay being built up in several stages (Saylor 1978a:51). One of the vessels illustrated in this study by Saylor (1978a:55, Figure 1) might be SLW. Goltz creates the bottom of a vessel by the coiled method before placing it into the textile and adding clay. The walls are thinned by the use of a small tool. A pot would be supported by a textile bag (Goltz 1991:3; Saylor 1978a:51) which was probably also held up by a hole in the ground or a skin stretched across a frame (techniques used by Grant Goltz). Meyer (1998:70) suggested that the sprang textile technique would account for the roughly parallel vertical cord impressions left behind while manufacturing a vessel. Although there are no specific references about the re-creation of SLW manufacturing, several experimental studies of traditional pottery making (e.g. Budak 1985, 1991; Simon 1979) provide useful information in discerning how these skilled craftspeople may have proceeded. Unfortunately, these skills essentially disappeared after the introduction of metal kettles by Europeans (e.g. Spector 1985). It seems most likely that SLW vessels were manufactured by the paddle and anvil method (Figure 2.4) in central Minnesota or by the textile bag technique which is suggested from the parallel vertical textile impressed vessels (e.g. Figures 2.6, 2.7) in the northern and eastern distribution of the ware.

In the study area, there are very few records of direct observation made by early travellers about Aboriginal pottery use. Matthew Cocking, of the Hudson Bay Company, described these activities in 1772 when he was sent to central Saskatchewan to study the impact of the Northwest Company's ever widening territory (Burpee 1908; Russell

1991:105-107). He commented about pottery at two different (probable) Atsina (a.k.a. Fall, Gros Ventre, or Rapids) Aboriginal camps located about 100 km southwest of Saskatoon, Saskatchewan (Malainey 1991:359, 1997:93). Cocking, in a notation written on October 7, 1772, described earthen cooking pottery that he had found at an old camp belonging to the *Archithinue* (probably Atsina) (Burpee 1908:108; Malainey 1991:359). Later in the year, on December 5, he noted that group that he referred to as the *Powestic-Athinuewuck* (Water-fall) Natives made their own vessels and cooked in them (Burpee 1908:111; Malainey 1991:359). Cocking described these vessels as “much in the same form as Newcastle pots, but without feet” (Burpee 1908:111). Newcastle pots refer to a type of earthenware vessel recovered in English archaeological sites (as viewed by the author at the British Museum). These notations provide a general time frame for the latest manufacture or use of Aboriginal pottery in the central Saskatchewan area, which was likely by the Atsina (Malainey 1991:360).

Of related importance to the study area is La Vérendrye’s 1734 notation that his Cree and Assiniboine informants told him about the *Ouachipouennes* (Mandan): “for kettles they use pots made of sandstone or of clay ornamented on the outside and covered with a kind of varnish inside, and their domestic utensils are of a similar kind” (Burpee 1968:119, 122). Thus, pottery was still being made by the Mandan, who were found in what is now North Dakota, in the 1730s. It is likely that it was still being manufactured in the nearby study area at this time and perhaps slightly later than Cocking’s 1772 observations.

Clay wastage has been recovered at the following sites which have SLW: Wanipigow in southeastern Manitoba (#C.P. A50-3035; viewed by the author); Long Sault (Arthurs 1986:205) in northwestern Ontario; Jamestown Mound (Snortland-Coles 1985:5.30) and Quast (Gregg et al. 1985:202) in southeastern North Dakota; as well as Old Shakopee Bridge (Gibbon 1976:16, 21) and Battle Island (Gibbon 1987:6) in Minnesota. These findings indicate that vessels were made at a particular site, since these

discards contain temper and were probably the byproducts of pot manufacturing. Some recovered clay waste was also decorated (Snortland-Coles 1985:5.30; Spiedel 1989:32) or has been fired (Hamilton 1981:113). Snortland-Coles (1985:5.30) reported that the baked clay object from the Jamestown Mounds project was associated with Component III or that which SLW was found in. This item was recovered from Feature 6 which is a large, oval hearth containing fire cracked rock, ash, burned bone, Knife River flint flakes, and charcoal (Snortland-Coles 1985:5.30). The latter item was radiocarbon dated and assessed at A.D. 830±70 (Snortland-Coles 1985:5.30). However, no geochemical studies have been completed to indicate what type of pottery might be associated with any of these clay discards, or if this association is possible.

Thus, it seems most likely that SLW vessels were manufactured by the paddle and anvil method in Minnesota or the textile bag technique suggested from the textile impressed vessels in the northern and eastern distribution of the ware (e.g. Figures 2.6 and 2.7.). Experimental archaeologists (e.g. Goltz 1991) have proven that thin, well made vessels can be manufactured in textile bags, so this would indicate a likely method that makers of SLW could have used. Despite the assured manufacturing method being unknown, SLW was well made pottery.

**2.3.5.2 Vessel Usage.** Pottery vessels were used by Aboriginal people for a number of purposes (Rice 1987:209) including cooking, mixing, storage, ceremonial purposes, mortuary rituals, long or short distance transportation, as well as carrying water (Malainey 1995a:76-77). Malainey (1995a:60) has suggested three types of analyses to determine vessel function: paste, use-alteration, and morphological. Paste analyses are completed to study the materials used in making pottery, how it was constructed, and mechanical performance characteristics. Use-wear studies inspect the physical alterations that have taken place on the pot such as charring, pitting, and abrasion (Malainey 1995a:71). Morphological analyses examine ethnographic and archaeological examples

to ascertain vessel functions. All of these analytical methods for studying pottery are important.

Cooper and Johnson (1964) indicated that SLW vessels were used for cooking, food bowls, and storage. They hypothesized that the more spheroidal vessels, like those from Osufsen Mound in Minnesota, were likely food bowls rather than cooking or storage pots (Cooper and Johnson 1964; Table 2.1); however, their only reasoning for this idea is that these two vessels terminate differently in the lip area (Figure 1.4). Later in their article, Cooper and Johnson (1964:478) labelled them mortuary vessels, which is the more accepted explanation, given that they were found in direct association with a human burial and they are smaller versions of utilitarian pots (Anfinson 1979:222). Birk (1977a) noted that Vessel 1 from the Norway Lake site was a mortuary vessel (Figure 2.4; Table 2.1). Some of these SLW vessels found in mound burials (Snortland 1994), may have been used for ceremonial purposes.

Carbonized residue is sometimes present on the interior of SLW sherds, indicating that they were used for cooking food. Unfortunately, none of the residue from these vessels has been studied to indicate what was cooked in them (e.g. Malainey 1995a; Thompson et al. 1994). In Minnesota, some pots exhibit impressions of wild rice grains (Birk 1977a), indicating that this product was at the site where the vessel was made and somehow became incorporated into the paste before firing. Cooper and Johnson (1964:475) suggested another possible use for SLW vessels, particularly from the Scott site: "Many of the sherds appear to be much overfired, but Wilford [who excavated there] believes that this was subsequent to their original manufacture and due to the use of the original vessels as wild-rice-parching containers. . . . Wild rice still grows luxuriantly in [nearby] Mud Lake." Hence, SLW may have been used for cooking and parching wild rice, given that many of these sites are found near modern stands of this plant (e.g. Johnson 1969a). Burns (1994:142) postulated that some Bird



**Table 2.1. Selected measurements of SLW vessels from habitation and mortuary contexts.**

Site, Location, Vessel	Height (cm)	Diameter of Orifice Ext. (cm)	Diameter of Max. Body Width (cm)
<b>Habitation</b>			
<sup>1</sup> Falcon Lake, MB	30.00-33.00	26.00-27.00	33.60-34.80
<sup>2</sup> Fickle, WS, Vessel B	23.70	26.50	30.00
<sup>2</sup> Fickle, WS, Vessel A	23.40	21.50	28.00
<sup>3</sup> Norway Lake, MN, Vessel 2	23.00	20.00	24.00
<b>Mortuary</b>			
<sup>4</sup> Jamestown Mound, ND	16.75	11.44	14.70
<sup>3</sup> Norway Lake, MN, Vessel 1	12.60	14.00	16.00
<sup>2</sup> Osufsen Mound, MN, Vessel C	12.50	16.00	16.50
<sup>2</sup> Osufsen Mound, MN, Vessel D	9.20	14.30	13.50

<sup>1</sup> Assessed from a partially reconstructed vessel by Trotter (1973:50)

<sup>2</sup> From Cooper and Johnson (1964:477-478); shown in Figure 1.4, Vessels A-D

<sup>3</sup> From Birk (1977a:21, 22); shown in Figure 2.4; Vessels A, B

<sup>4</sup> From Snortland-Coles (1985:5.13); shown in Figures 2.6, 2.7

Max.-Maximum

MB-Manitoba

MN-Minnesota

WS-Wisconsin

ND-North Dakota

Lake complex vessels, found in a similar areal distribution to SLW, might have been used for cooking wild rice. The distribution of stands of this plant in conjunction with recovered pottery of this affiliation is likely the reason that this idea was suggested by Burns (1994). Table 2.1 indicates the smaller size of two vessels found at Osufsen mound, one at Norway Lake site mound, and one from Jamestown Mound as compared to the Falcon Lake, Fickle, and Norway Lake habitation site pots. Cooper and Johnson (1964) noted that the two smaller mortuary vessels also terminated differently, that is straight, near the lip (Figure 1.4). Birk (1979:176) noted that several SLW internal vessel capacities are consistently well below 2.0 litres (l) in mortuary bowls, such as Vessel 1 (1.4 l capacity), from the Norway Lake site (Birk 1977a:21). Although there are two exceptions from the Cooper village site (Lothson 1972) of less than 2.0 l, utilitarian vessels usually cluster in the larger 7.0 to 10.0 l and 14.0 to 15.0 l ranges (Birk 1979:176).

Since exotic lithic materials, such as Knife River flint, are often found with SLW, this may indicate that trading was taking place. It is possible that SLW vessels were traded into sites, due to their high quality or perhaps full of wild rice, but the sheer weight of pottery vessels makes their transport rather cumbersome. However, pots made from northern Minnesota clays have been tested and proven to be rather hardy; in fact, when having to purposefully break replicas for displays, it is quite difficult to fracture them (Grant Goltz, personal communication, 1997). Goltz (personal communication, 1998) also noted that Minnesota SLW is relatively light weight. This lightness may result from the addition of shell temper, as this additive is not as heavy as rock fragments or grit (Mason 1981:357).

**2.3.6 Temper.** This attribute refers to aplastic particles deliberately added to the clay paste, before the manufacture of a pottery vessel, to enable the clay to dry without cracking by decreasing the amount of shrinkage (Budak 1991:53). Shepard (1974:161) described the best way to distinguish between temper and accessory minerals in clay: “in the vast majority of the pastes, the characteristics of the inclusions answer this question; that is, they are materials that do not occur naturally in clay--for example, sherd, various igneous, sedimentary and metamorphic rock fragments, coarse sands, and pumice.” Sandy Lake ware contains shell, grit, or both types of temper (Birk 1979; Cooper and Johnson 1964; Peterson 1986). A common method in Mississippian and some Sandy Lake pottery manufacturing was to add shell, typically from molluscs, which was burned, crushed, and added to clay (Anfinson 1979:223; Budak 1991:53). Grit temper (Figure 2.8) is derived from eroded or decayed rocks which, contrary to general descriptions often used by archaeologists, is not always granite (Shepard 1974:161). Cooper and Johnson (1964:475) described SLW as having “temper that consists of very fine particles of angular quartz, feldspars and mica, undoubtedly indicating finely pulverized granite.” While grit may clearly be identified as coming from granite occasionally, in the majority

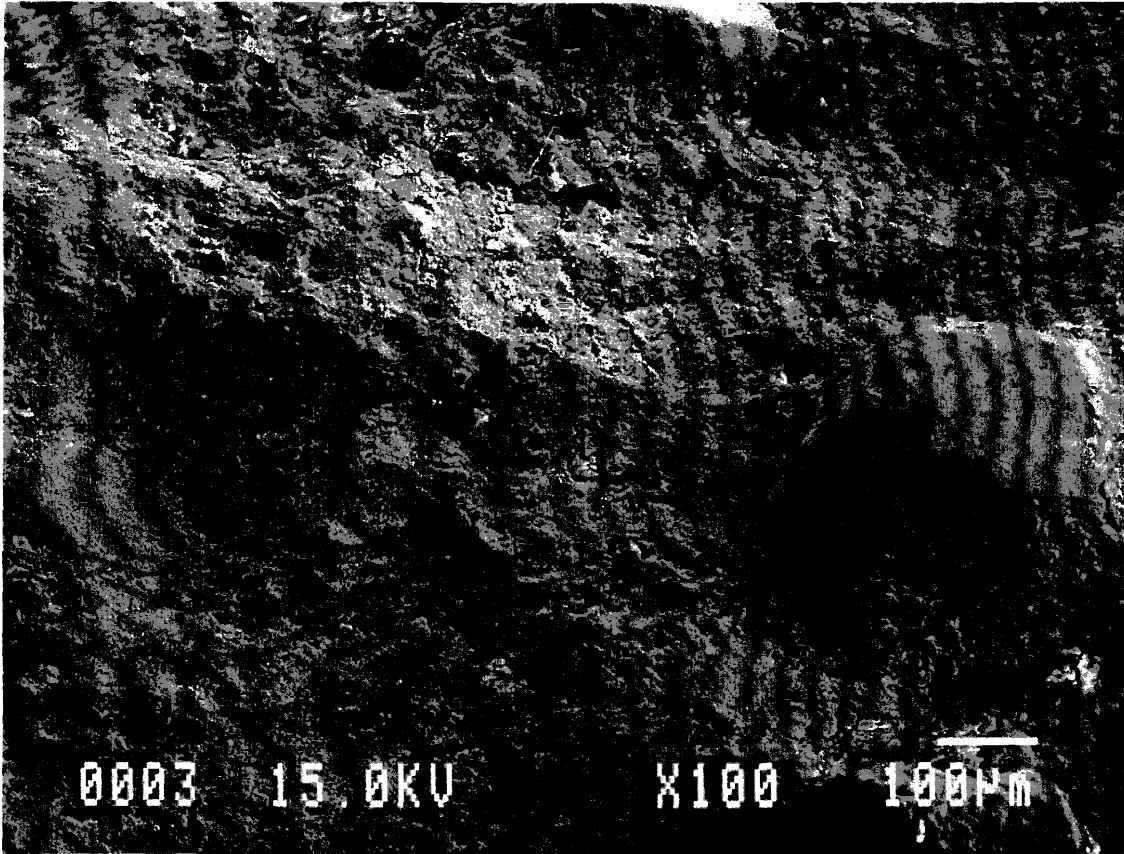


Figure 2.8. Scanning electron microphotograph of a piece of grit temper (angular piece on right) and a trough created by another piece of temper to the left. Sample taken from a Sandy Lake Smoothed sherd from the Duthie site (#S-102), southwestern Manitoba. Note that the paste is fine and laminated.

of sherds this would not be discernible. The rocks which grit is acquired from are usually of volcanic or metamorphic origins.

Some instances of 'sand' temper have been suggested for SLW, although one should remember that sand refers to a specific sedimentology particle size (Boggs 1987). Most archaeologists use this term for rounded particles and grit is considered to have angular properties. However, sand may have angular to rounded particles according to standards developed by sedimentologists (Boggs 1987). Regardless of the somewhat loose interpretations of temper by archaeologists, some SLW vessels have shell temper, while most other Woodland pottery and the majority of Plains Village vessels contain grit temper.

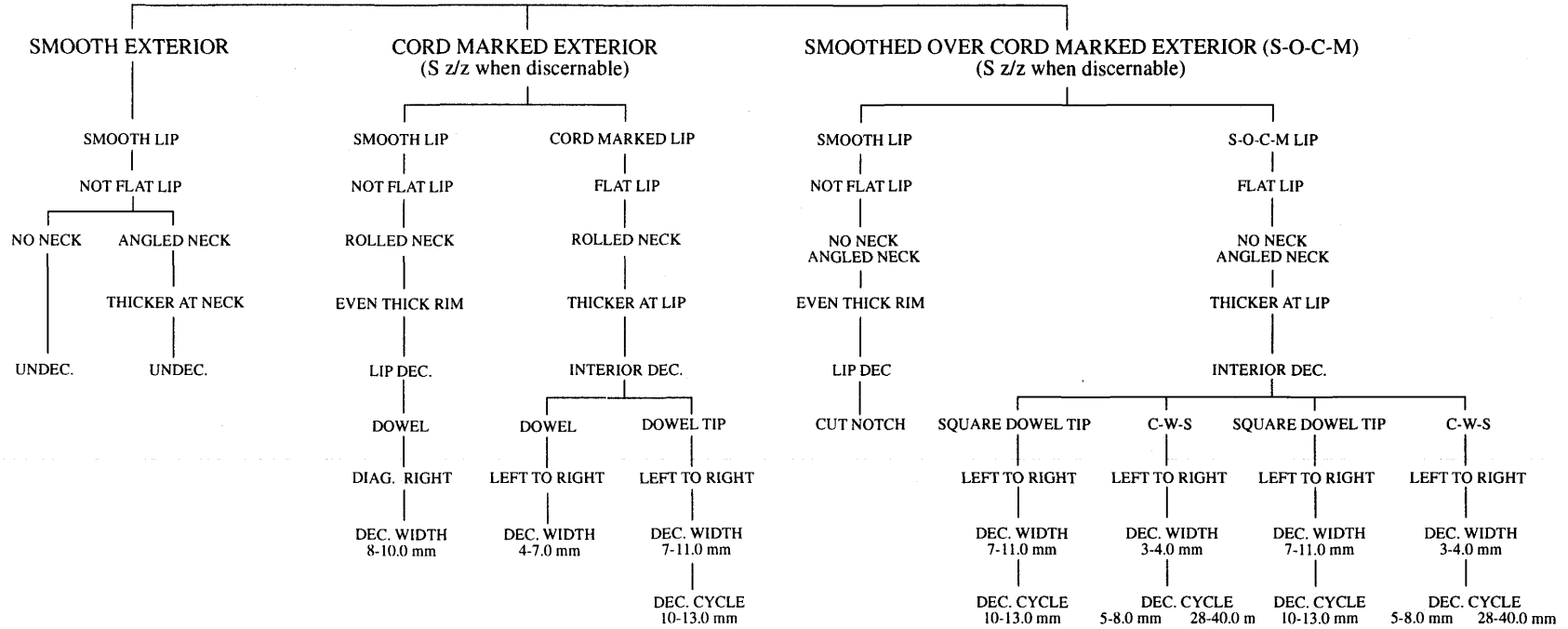
An interesting dichotomy exists between where grit and shell tempered SLW are found. In its northern range, this ware is almost entirely grit tempered, while a large percentage of the southern samples in Minnesota and Wisconsin are shell tempered (Arthurs 1978:59). It has been suggested that the makers of SLW may have adopted the use of shell from adjacent, contemporaneous Mississippian groups (Arthurs 1978:59; Budak 1991:53). Cooper and Johnson (1964:475) noted that the shell in SLW sherds is finely ground, usually being smaller than 1.0 mm in diameter, whereas Oneota vessels that are found in the same region have larger shell particles of 2.0-5.0 mm. They also stated that shell tempering, usually in small amounts in SLW vessels, is frequently seen on the interior and exterior (Cooper and Johnson 1964:475).

Michlovic and Swenson (1998:15) reported that some Northeastern Plains Village ware vessels, often associated with SLW, also contain both shell and grit tempering materials (e.g. eight sherds at the Naze site in Gregg et al. 1985:99). In these upper James River region pots shell temper is not that common, being found in isolated occurrences (e.g. one of 112 body sherds is shell tempered at the Beeber site in Gregg et al. 1985:184). Given the physical, temporal, and areal similarities between SLW and Northeastern Plains Village ware, the few examples of shell tempered and often cord

roughened sherds may represent shell tempered SLW at these sites. Since the latter ware has been tentatively identified at many Northeastern Plains Village sites, it is even more likely that this is the case.

Cooper and Johnson (1964) noted of SLW that “no significant differences in thickness between shell-tempered and grit-tempered rims are found, nor are there any apparent differences in paste or color between grit- and shell-tempered rims. . . . Tempering thus appears to be a completely independent variable and not diagnostic of typological variation within the ware.” Birk (1979:175) added that there are no apparent differences in decoration between SLW vessels tempered with grit or shell. Breakey’s (1981:40) study of several collections from the middle Red River Valley suggested that “there seems to be no connection between surface treatment, tempering agent, and decorative attributes.” Peterson (1986) disagreed and suggested that temper be given prior consideration over surface finish when dividing SLW into types. Using a series of chi-square statistical analyses, Peterson (1986:171) proposed that SLW be divided into two new types called Sandy Lake Shell Temper and Sandy Lake Grit Temper. She suggested that the existing types be modified because other attributes tended to vary on sherds containing these different tempers (Figures 2.9 and 2.10). After this initial division, she suggested that the new types be further subdivided by using the surface finishes of vessels (Peterson 1986). However, there are some vessels in her study that have both types of temper which would indicate that her scheme should have included a third type called Sandy Lake Shell and Grit Temper. She suggested that this combination of tempers might be considered a sub-type of the Shell Temper type at a later date (Peterson 1986:171). Although there are some relationships associated with this splitting (Figures 2.9 and 2.10), Arthurs (1978:59) suggested that shell tempered SLW pots were more common in the southern range because of greater Mississippian influence in central Minnesota. Thus, this classification method is problematic since there is no exclusivity to the temper, which is the basis for splitting, and does not really account for sherds with

STANDING RIM  
SMOOTHED INTERIOR SURFACE TREATMENT  
GRIT TEMPER



49

Figure 2.9 Relationships of attributes on grit tempered Sandy Lake ware from north central Minnesota as summarized by Peterson (1986:132).

Undec.-undecorated  
Diag.-diagonal

Dec.-decorated  
C-W-S-cord wrapped stick

STANDING RIM  
SMOOTHED INTERIOR SURFACE TREATMENT  
SHELL TEMPER

50

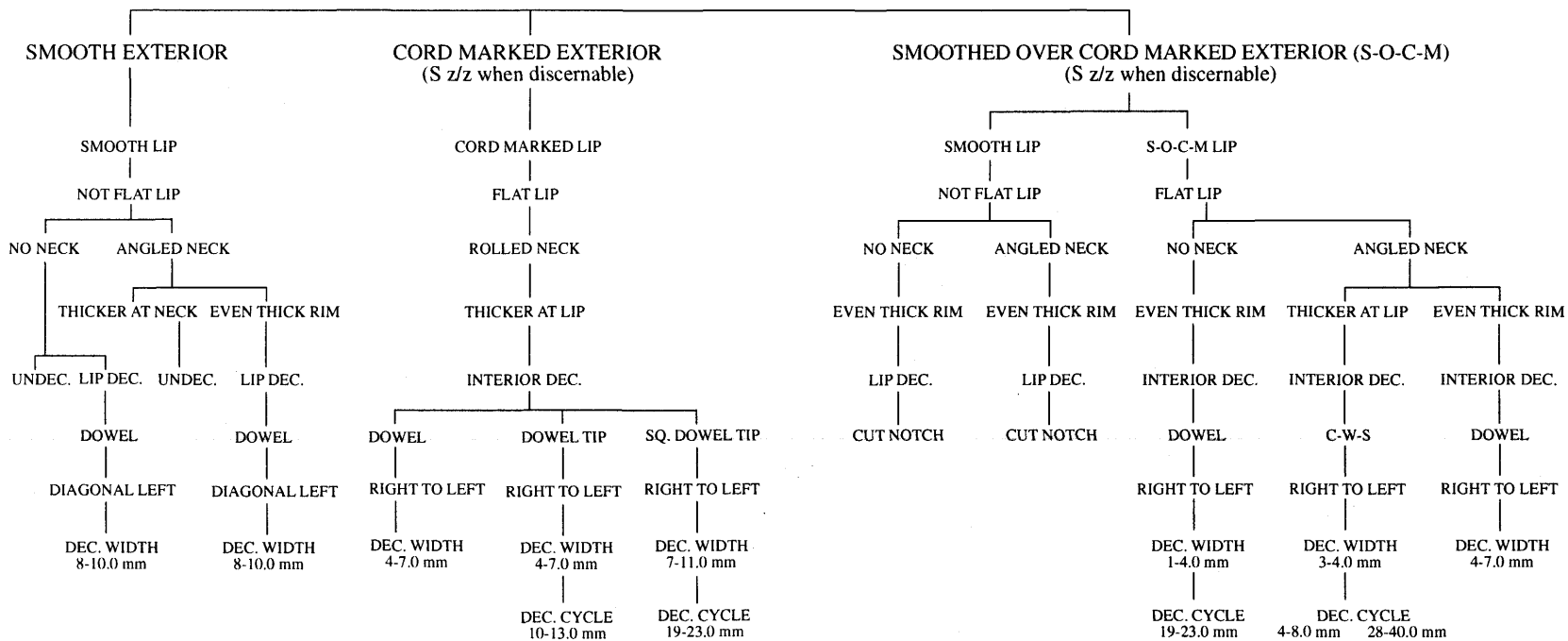


Figure 2.10. Relationship of attributes on shell tempered Sandy Lake ware from north central Minnesota as summarized by Peterson (1986:131).

Dec.-decoration  
C-W-S-cord wrapped stick

Sq.-square

both types of temper. Few researchers have used this scheme, although Michlovic (1987) and Breakey (1981) listed temper as the first category in their tables. Breakey (1981:41) could not determine the temper in 417 (20.79 per cent) of 2006 sherds but she was able to classify 100 per cent of the surface finishes. This example indicates that Peterson's classification would not apply to about 21 per cent of the sample. Since there seems to be logical, usable types when defining the ware by surface finish, the author suggests the perpetuation of the Cooper and Johnson (1964) categorization.

Whether one agrees with Cooper and Johnson (1964) or Peterson (1986) about how SLW types should be divided, there are some problems with the traditional definition 'wares' as indicated by Rice (1976:539):

The chief obstacle to implementing the ware concept is that paste composition and surface treatment are two independent properties. The creation of a comparative unit for pottery such as "ware" based on both paste composition and surface treatment is a variation of the classic "apples and oranges" problem. These two classes of attributes are technologically independent and should not be combined into a single organizational level. Although paste texture, for example, may certainly influence surface characteristics or appearance of unslipped wares, it does not necessarily follow that one particular paste will be unslipped and another will be slipped.

Rice (1976) further explained that paste composition is at least partially environmentally determined, whereas a potter will determine the surface finish of a vessel. Although temper is usually added by the potter, thus culturally determined, it is a different variable.

**2.3.6.1 Shell Temper.** Only a few shell tempered vessels have been found in central southern Canada (Figure 2.11). However, discussions with other researchers indicate that some assume that any shell tempered body sherds, not associated with rim sherds, are automatically SLW. This association is logical since SLW is found in Canada but other attributes have to be considered. However, Arthurs (1986:197) identified a shell tempered vessel portion, which he tentatively included with other SLW, from the Long Sault site in northwestern Ontario. A number of shell tempered sherds from The Forks excavations in Winnipeg may be SLW (Mary Ann Tisdale, personal communication



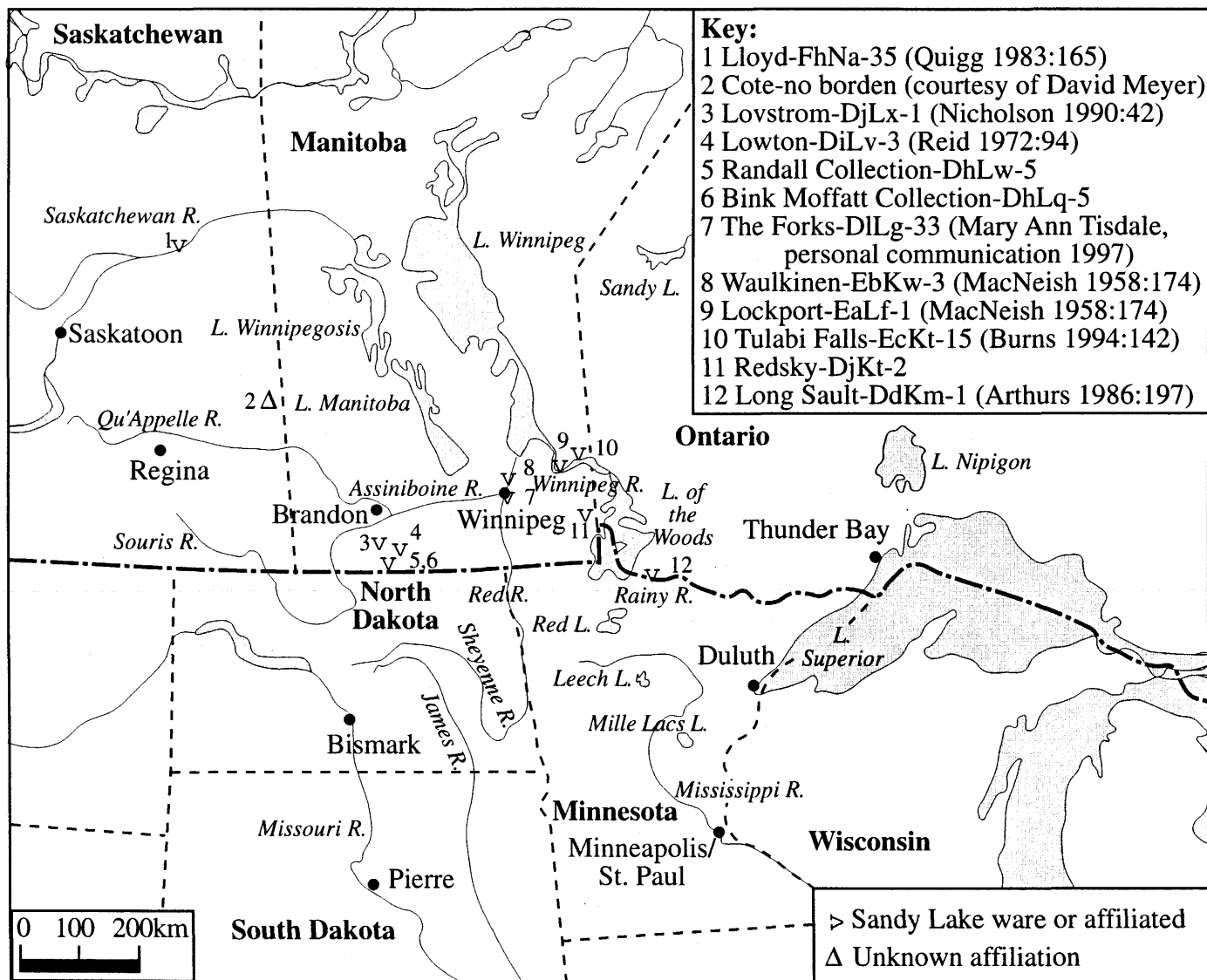


Figure 2.11. Locations of known sites with shell tempered pottery in southern central Canada.

1997). Given that there are other SLW vessels in this area and at this site, it is logical to assume that there is some present at The Forks. MacNeish (1958) also noted shell tempered, cord marked sherds in eastern Manitoba which Cooper and Johnson (1964) suggest are SLW. These were found at the Lockport and Waulkinen sites (MacNeish 1958:174). Burns (1994:142) also noted a shell tempered sherd from the Tulabi Falls site in southwestern Manitoba. Several shell tempered vessels from the Lowton site (Nicholson and Malainey 1995; Vickers 1950:11) in the southwestern part of the province resemble SLW (see discussion in Chapter Five). At the Lovstrom site in southwestern Manitoba, Nicholson (1990:42) reported that: "immediately to the east of the block - several obliterated fabric body sherds were recovered containing shell temper. . . . No shell tempered sherds were found in the block excavation. . . . It may be that the vessels in Block D represent a Sandy Lake component." The author noted a shell tempered sherd in the Gordon Randall collection and another from the NE1/4 of 29-13-18 W1 in southwestern Manitoba. At least one vessel with shell temper is represented at each of the Wanipigow and Redsky sites in southeastern Manitoba (Figure 2.11). These sites will be discussed further in Chapter Five.

This study investigated if Peterson's (1986:131, 132) charts could be applied to SLW from the northern extent of the ware. The shell tempered rim sherds from the Lowton site were compared to Peterson's results for shell tempered SLW (Figure 2.10). This site was chosen because it was the only one with significant numbers of shell tempered sherds in south central Canada (Table 5.13). However, the vast majority of rim sherds from this site are grit tempered. There are incompatibilities with the typology as suggested by Peterson (1986), since two vessels from the Lowton site are check stamped SLW (120-577/120-754 and no #), which eliminates them from the typology immediately. The only other possibilities for check stamped pottery in this area would be Middle Missouri or Mortlach pottery. Other attributes and the spatial distribution would indicate a closer affiliation to SLW. Temper is influenced more by spatial than temporal

factors, as Arthurs (1978) had indicated, because shell tempered SLW is found in early (e.g. Mooney) through late sites (e.g. Long Sault).

A few examples of shell tempered vessels were recovered, well out of the typical range of pottery with this tempering material, in Saskatchewan (Figure 2.11). Vessels #3 and 9 from the Lloyd site at Nipawin, Saskatchewan (Quigg 1983:157, 165) are shell tempered and appear to contain traits from Selkirk as well as SLW. David Meyer (personal communication, 1998) found several body sherds with this temper on the surface of the Cote site. It is located about 0.6 km east of the hamlet of the same name in east central Saskatchewan. Although these sherds are cord roughened or one way oriented textile impressed, they are not rim sherds and a cultural affiliation remains uncertain. However, it is highly probable that these vessels are SLW or related since shell tempered pottery in Saskatchewan and central Manitoba is otherwise unknown.

Sandy Lake ware has been identified at the Tailrace Bay site (Mayer-Oakes 1970) which is relatively close to the two sites with shell tempered vessels in west central Manitoba. Thus, it is likely that shell tempered vessels found in Canada, well to the north of the usual range of this type of tempering, were transported into these sites rather than being made there. Alternatively, people were experimenting with different materials and tempering mediums on a very limited basis. The fact remains that shell tempered vessels are not found west or north of these isolated finds, suggesting that these pots were brought into what is now Saskatchewan.

Budak's (1991) experiments showed that shell temper makes a vessel less permeable, although the clay is more difficult to work with than when using grit temper. His experimental vessels were bowl shaped like some SLW. Longer time and greater effort is required in manufacturing a shell tempered vessel, although the flat shape of crushed shell, as opposed to grit, would have been easier to align with the platy clay minerals (Mason 1981:357). Perhaps, makers of SLW in the south were willing to spend the extra time and effort in the tradition of Mississippian potters. Although mollusc

shells would be readily available along most rivers in the area where SLW is found, almost all vessels in the northern range have grit temper except those noted previously (Figure 2.11).

The firing of shell tempered vessels can also be problematic. There is a danger that when a shell tempered pot is fired, the calcium carbonate ( $\text{CaCO}_3$ ) may break down into calcium oxide ( $\text{CaO}$ ), which can combine with water vapour (Mason 1981:358). The result can be rapid expansion and the destruction of a vessel. However, the addition of salt ( $\text{NaCl}$ ) apparently rectified this situation in some examples and thin section examination of some shell tempered sherds has revealed cube shaped casts of salt crystals (Mason 1981:358). Since SLW has not been examined for this mineral, it is unknown if Sandy Lake potters used it along with shell temper. It is quite impressive that this correlation was discovered by precontact potters and the salt would likely have been acquired through trade.

Peterson (1986) suggested that shell temper may have been used by SLW potters because of the nature of the clay in Minnesota that was available. A small sample of sherds from the Mooney site (21NR29) in Minnesota was tested by x-ray diffraction, in order to evaluate the type of minerals in the paste (Shields 1983 in Peterson 1986). It was determined that the clay mineral, montmorillonite, constituted a high percentage of the paste and Peterson (1986:176) suggested that this mineral is often found in Minnesota clays. Adding burned shell to the paste enhances the workability of high montmorillonite clays (Peterson 1986:176). Thus, Peterson (1986:177) suggested that “the use of shell may have allowed the use of clays which could not have been used without its introduction.” It should be noted that experienced Aboriginal pottery replicators Grant Goltz and Michael Budak have both used natural clay from various sources in Minnesota for many years with or without shell (Budak 1991) or grit temper; they find this clay to be very workable and successful when fired (Grant Goltz and Michael Budak, personal communication, March 1997). Romano (1992) also found clay from the Pine County,

Minnesota locality to be quite useable with the addition of grit temper. These testimonials indicated that shell temper usage does not appear to be required with the clay being used in Minnesota.

**2.3.7 Surface Finish.** In analysis, surface finishes are differentiated from decorations, as previously discussed, although some people confuse these two attributes. The surface finish of a vessel refers to the way that the exterior and interior have been completed, usually referring to a texture, such as that found on SLW: check or simple stamped (Figure 2.12:A and B), obliterated (Figure 2.12:C), cord roughened (a.k.a. corded or cordmarked in Figure 2.12:D), and parallel vertical textile impressed (Figures 2.6 and 2.7). A fifth kind of exterior surface finish on SLW is smooth, which often exhibits some smoothing marks. These surface finishes are rubbed, usually with a tool, before the vessel dries completely (Anfinson 1979:224). Peterson (1986:56) defined the smooth exterior surface finish on SLW as one that has never been cord marked, or the cordmarking is so obliterated that no fiber impressions are visible.

Cooper and Johnson (1964) used the exterior surface finish to define the Smooth and Corded types of SLW; Birk (1979:178) added a third type called Stamped which included check and simple stamping (Figure 2.12). The author proposes Sandy Lake Obliterated and Sandy Lake Textile Impressed types. Anfinson (1979:220) noted that cord marked vessels, being rare in Mississippian and common in Woodland sites, bear the impressions of cordage from the manufacturing process using a paddle and anvil. Arthurs (1978:57) referred to the Minnesota SLW corded sample as “distinguished by the vertical cord malleations covering the entire exterior surface of the vessel” (e.g. Figure 2.4). Check stamped pots are common in Plains Village and Mortlach sites, and have multiple diamond or checkerboard patterns that were applied by a paddle (Anfinson 1979:219). A simple stamped surface finish results from paddling the vessel with a grooved or thong wrapped paddle (Anfinson 1979:224). Textile impressions are discussed separately in Section 2.3.7.1.

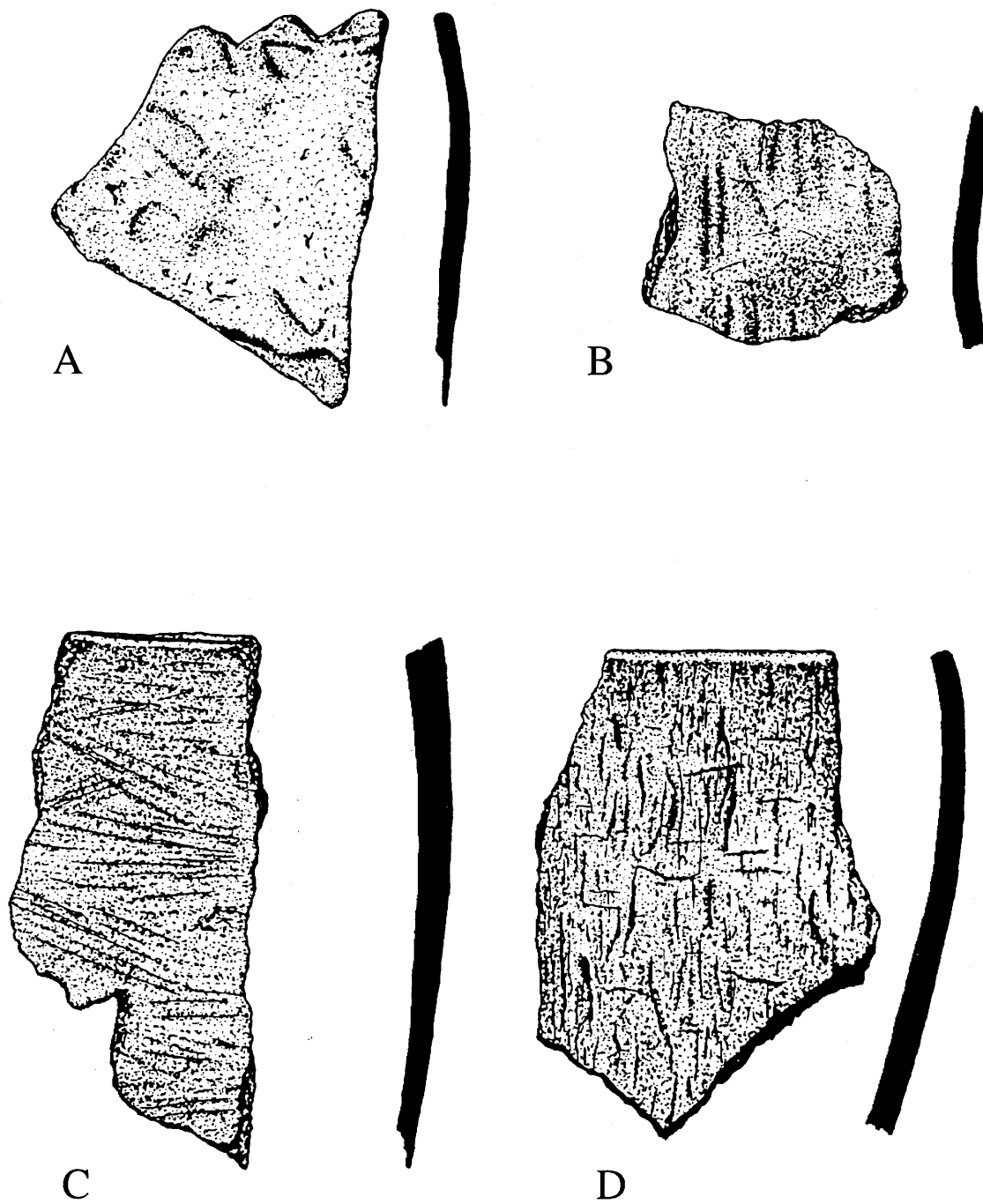


Figure 2.12. Four different surface finishes found on Sandy Lake ware vessels (from Birk 1979:181): A)check stamped rim; B)simple stamped neck sherd; C)cord marked rim; and D)smoothed (obliterated?) rim. There was no scale on the original figure.

Arthurs (1978:62) noted that the Smooth type of SLW was absent from Ontario collections, and later, he suggested that the textile impressed surface finish was likely a trait only found north of the Rainy River (Arthurs 1986:199). Peterson (1986:81-82) stated that smoothed over cord marked (a.k.a. obliterated) surface finishes should be separated from smooth vessels, as her chi-square tests seemed to indicate that this attribute was frequent enough to be a different preparation recognized by the potters. Indeed, these are separate processes used in finishing a vessel surface. Furthermore, Peterson (1986) suggested revisions to the typing of SLW, based on temper, as explained in Section 2.3.6. However, the author suggests that since almost all researchers have persisted in using the original three SLW types, Corded, Smooth, and Stamped (which is actually two finishes; Figure 2.12), this should perhaps continue. A fourth finish/type is referred to here as Obliterated, based on Peterson's findings of smoothed over cord marked vessels. Parallel vertical textile impressed (Hartlen 1996a:17; Snortland-Coles 1985:5.13), a fifth kind of SLW exterior surface finish, is indicated by Arthurs' (1978, 1986) work in Ontario, samples from southeastern Manitoba, and the Jamestown Mound vessel (Figures 2.6, 2.7).

The stamped exterior surface finish found on SLW pertained to some vessels found in the Mississippi Headwaters region as far southeast as Mille Lacs Lake and the lower region of the Platte River (Birk 1979:176). These SLW pots have simple stamped surface finishes (Figure 2.12:B), which Birk (1979:178) described as ranging from:

parallel grooves and ridges to more haphazardly applied, amorphous, facet-like impressions. Overlap, criss-crossing, and smoothing often contribute to obliteration of surface detail. It is possible that some of this sample is confused with fabric impressed ceramics such as those present in the Late Blackduck ceramic phase (Lugenbeal 1978).

Check stamped SLW (Figure 2.12:A) have square or diamond shaped depressions (Birk 1979:178). Two sites with the Stamped versions of SLW are the Upper and Lower Rice Lake sites, although they have been reported at Mille Lacs Lake (Birk 1979:178). A check stamped SLW mortuary bowl was recovered at the Cotton Lake Island site (Birk

1979:178). Interestingly, Birk (1979:178) noted that 60 per cent of check stamped pots are grit tempered, with the remaining 40 per cent shell tempered, whereas 28 per cent of the simple Stamped type are grit tempered and 72 per cent have shell. He (Birk 1979:178) also described a notched variant for this type. Since a large portion of pottery from the Middle Missouri subarea is check and simple stamped, Birk (1979:179) suggested that there was some cultural interaction between this subarea and Minnesota during the late precontact period as evidenced by certain oral histories. It is evident that the stamped SLW has a limited spatial range, as described above, but it seems to be a valid construct since Birk (1979:178) noted about 200 sherds of this type.

**2.3.7.1 Textile Impressed.** Many different late precontact pottery wares, including SLW, have cord roughened (a.k.a. cord wrapped paddle) or textile impressions (a.k.a. fabric impressions) that were produced by finishing the vessel surface with a paddle covered with twisted cords or molding in a bag (Figure 2.13). The term textile impressed, is probably more appropriate for archaeological samples, as they are of a much looser weave than a fabric (i.e. tightly woven, possibly synthetic modern cloth; see Hartlen 1996a:17). Sometimes these cords were used to decorate vessels by single cord or cord wrapped object impressions (Figure 2.13), which are fairly common on Plains Village and SLW or other Woodland pottery, respectively. Since the cordage or textiles are rarely preserved in archaeological sites (Kuttruff 1980:40), one has to infer from impressions on fired vessels that these were used (Hurley 1979). Johnson and Ready (1992:39) noted that funerary masks from McKinstry Mound 2 were underlain by cattail leaves and what appears to be interlinked twisted cord. An impression preserved on a vessel actually reflects a negative image of the original cords or textile used in its production (Anfinson 1979:224), so a positive image is typically made by impressing plasticene or sometimes with (potentially destructive) latex peels (e.g. MacLean 1995).

Counter-clockwise cordage twists are known as 'Z' whereas clockwise twisted cords are designated 'S', relating to the diagonal aspect of each letter (Figure 2.13).



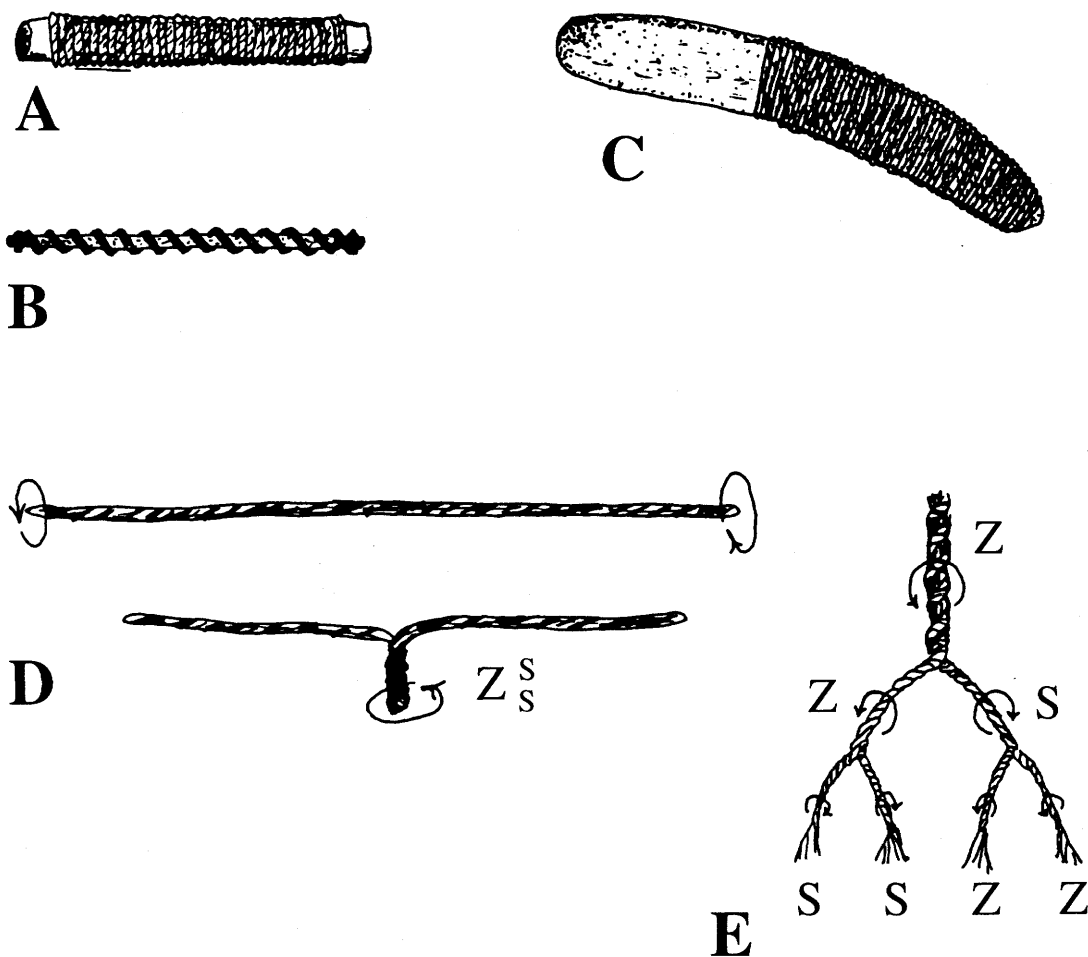


Figure 2.13. Several different uses of cordage: A, B) cord wrapped objects for decorating; C) hypothetical cord wrapped paddle (wood or bone) used in the paddle and anvil method; D) double twisting a cord; and E) multiple strand cord with a complicated twist pattern (after Hurley 1975). Modified after Anfinson (1979:9). Z twists go counter clockwise and S twisted cords are clockwise.

Complicated twisting is indicated by increasing smaller letters (e.g.  $Z^S_s$ ) representing smaller cords within one another (Anfinson 1979:224) (Figure 2.13). Gibbon (1976:17) differentiated between distinct forms of cord marking on the body sherds from the Old Shakopee Bridge site in Minnesota as  $S^Z_z, s^Z_z$ , and  $z^S_s$ ; the thin, shell tempered body sherds with  $S^Z_z$  were probably SLW of which there are at least 24 vessels. At the White Oak Point site, Lugenbeal (1982:8) observed that the  $Z^S_s$  twisting was typical of Brainerd ware and that SLW or Blackduck sherds had cords that twisted in the opposite direction. Indeed, Peterson (1986:Appendix III) suggested that more of her sample had  $S^Z_z$  impressions. Goltz (1991:3-4) explained the difference between these different kinds of twisted cords as likely being related to a person being right handed, favouring S twists, or left handed using the Z twist. This assessment is logical but it may not account for a cultural preference as suggested by some researchers (Gibbon 1976; Lugenbeal 1982; Peterson 1986).

Textile impressions can be classified by observing the warp (the set of cords directed up and down), the weft (those cords going across) and how they are interlaced or woven (Dyer 1923:46). Kuttruff (1980:41-42) noted the following types of textile impressions on archaeological pottery in the U.S.A.: twill weaves, plain weaves, twining, alternate pair twining, and plaited. Saylor (1978a:55, 56) described simple linking on Selkirk vessels, and interlinking/plaiting (sprang) on a vessel, which is more likely SLW from the Wanipigow site.

Several archaeologists have studied pottery in order to learn more about textile/cord technology including Saylor's (1978a) study, which was completed on a few of the Selkirk/SLW vessels from the Wanipigow Lake site; this is one of the sites in the study area of this thesis. Another example is MacLean's (1995) work with Selkirk pottery from east central Saskatchewan and northern Manitoba.

Goltz (1991:3) replicated textile bags and found them to be very useful for manufacturing thin vessels. He (Goltz 1991:3) also noted that these bags could be reused

many times and the archaeological record reflects some sherds that show evidence of patching a mold.

There are a number of plants known, mainly from ethnographic records, to have been used by Aboriginal people to manufacture cordage. Hurley (1979:4) listed many possibilities but the following species were most likely used by people in the Eastern Woodlands and Northeastern Grasslands where SLW is found: *Urtica gracilis*, *Boehmeria*, *Laprotea* (nettles); *Asclepias* (milkweed); and *Typha latifolia* (cat-tail leaves, stems in Johnson and Ready 1992:20, 39). Hurley (1979) noted that North American Aboriginals also used *babiche* (narrow strips of rawhide) to impress decorations on pottery.

Saylor (1978a:49) pointed out the importance of studying exterior vessel finishes along with decorations, particularly with fairly plain pottery such as is typical in the Selkirk composite. He also explained that there are several requirements for studying textile impressions including: maximum possible vessel reconstruction; a minimum 10 cm<sup>2</sup> surface area; quality latex or plasticene impressions; and impressions that are from a textile- not cord wrapped paddle impressions (cord roughened) (Saylor 1978a:50). The latter criteria is often difficult to assess as impressions are sometimes intricate or too obscure to ascertain. However, Saylor (1978a:50, emphasis his) determined that the appearance of cord roughened pottery will:

exhibit extensive smearing around the margins of the impression. The impressions are not deep, are discontinuous, and overlap one another. One will essentially find that non-fabric impressions are non-patterned and extremely difficult to follow. An ethnographic example of how vessels are formed using the 'cord-wrapped-paddle' technique is found in Wilson (1977:97-105).

Hence, textile impressed vessels will not exhibit the characteristics mentioned above and it should be possible to follow individual cords from the bottom (e.g. Figure 2.7) to the top of a vessel (Figure 2.6) (Saylor 1978a:51). He (Saylor 1978a:51) stated that all textile impressed sherds appear laminated in cross section because the clay was applied in

several stages. The plate like nature of clay minerals may also explain these laminations. Many Selkirk vessels from the Wanipigow Lake site (see Section 5.3.6) are very thin (2.0-4.0 mm), which suggested that they were manufactured in a woven textile bag, so as to support the weight of the unfired vessel (Saylor 1978a:51). Some of these extremely thin pots mentioned by him might be SLW, as it is generally thinner than the southern Selkirk pottery observed by the author. Wedel (1957:94-5) also recorded an ethnographic statement about how textile molds were used to prepare vessels.

Most SLW from the study area seems to exhibit parallel vertical textile impressions on the exterior, as named by Snortland-Coles (1985). This vertical nature would represent a prominent weft element in the original textile. In fact, SLW vessels are either parallel vertical textile impressed, or if there is no evidence of interlinking/joining of the cords, then it is cord marked. Although, as previously discussed, this is not always distinguishable. Many SLW vessels in Minnesota appear to exhibit more widely spaced cord marking (e.g. Minnesota pot from MMMN), which makes it easier to distinguish between the two surface finishes. Arthurs (1978) noted that all of his sample exhibited textile impressions, although there is not a detailed description and only one diagram (Figure 2.14). Many of the SLW vessels from the study area have vertical parallel textile impressed surface finish on the exteriors (see Chapter Five).

MacLean (1995:209) noted that “cursory examinations of Sandy Lake impressed pottery indicate that a different textile structure was used on the pottery and the textile orientation was also different” from Selkirk Composite vessels that she examined. The author found this statement to be true about southern Selkirk vessels. These Selkirk pots seem to have been made in much more intricately made textile bags that are not generally vertically oriented (as seen in MacLean 1995 and examined by the author). Meyer (1998:49) referred to some textile finishes as ‘amorphous’ or twined which would accurately describe the exterior surface finishes of Selkirk pots, whereas Duck Bay and SLW bear parallel vertical textile impressions. Grant Goltz has replicated parallel vertical

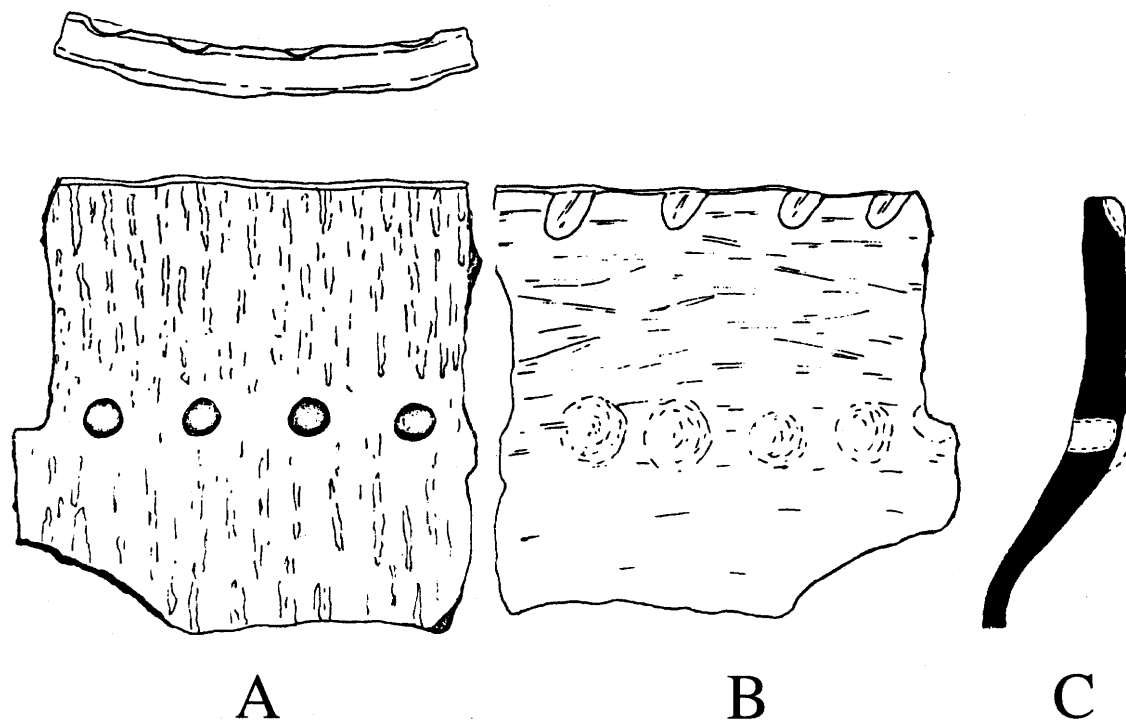


Figure 2.14. A typical Sandy Lake ware rim sherd from northwestern Ontario, found at the Long Sault site (DdKm-1): A) textile impressed exterior and lip views; B) interior showing bosses and notches; and C) the profile with vessel exterior to the left. Note the row of punctates/bosses. Modified after Arthurs (1978:58, Figure 1). There was no scale on the original figure.

textile impressed surface finishes by manufacturing vessels inside a sprang technique woven bag (Meyer 1998:49).

The exterior surface finishes of SLW can be summarized as: 1) cord marked ones which do not have any evidence of a woven technique; 2) smoothed; 3) check and simple stamped surfaces in a limited number of cases; 4) obliterated vessels which are partially smoothed over another texture; and 5) textile impressed pots which show a definite woven structure. The latter are typically parallel vertical oriented structures, although Peterson (1986:photo records) noted a few examples of amorphous textile impressed finishes. These isolated sherds may have represented southern Selkirk vessels that were present in her northern Minnesota sample. Almost all interiors of SLW vessels are smoothed.

**2.3.8 Decoration.** This attribute describes the purposeful application of adornment, sometimes in a pattern or with a motif. Since clay is a plastic medium, an artist's creation can be preserved after it is fired. Sandy Lake ware vessels are usually sparsely decorated, having a notched or undecorated (plain) variants (Cooper and Johnson 1964; Peterson 1986). This simplicity distinguishes them from other, more ornate potteries such as Blackduck, Oneota, or Duck Bay Stamp in the regions where they are all found. Cooper and Johnson (1964) specified that the interior rim surfaces were the only decorated parts of SLW vessels, and usually this decoration extends down from the inner lip corner to about 1.0 cm below the lip interior. They also indicated that some pots had decoration on the lip surface (a.k.a. the brim). However, Peterson (1986:53) suggested that there are two discrete attributes, in that most vessels have either interior rim or lip decoration. While these are different approaches to decoration, many SLW vessels also have decoration which affects the inner lip corner ('interior lip' in Peterson 1986:53), either through dowel impressions or crimping. Cooper and Johnson (1964) reported one incident of vessel quartering.

Even though SLW is considered to be conservatively decorated, there are many variations of lip/brim decoration produced by impressing round or sharp edged, or cord

wrapped objects as indicated by Cooper and Johnson (1964). Peterson (1986:57-58) noted much more variation in lip decoration which could be decorated with a cord wrapped tool, dowel, dowel tip, trailed line, or cut notched (crenulated is included) in which part of the lip was cut away with a sharp tool. Less than five per cent of vessel lips were trailed in Peterson's (1986:84) study sample. The motifs used to decorate the lips of SLW vessels are varied, according to Peterson (1986:59-60): oblique right, oblique left, zig zag, channelled, across the lip, bevelled in or out, diagonal cluster of two, oval tool impression, circular tool impression, or eight types of rarely occurring cut notching (wave left and right, saw tooth right or left, v-shaped spaced notching, v-shaped continuous notching, crenulated, or angled and straight u-shaped notches). The saw-tooth variation appears as the edge of a saw with projections on the lip. When impressions are evenly spaced, the rim appears to be crenulated (Koezur and Wright 1976:19; Peterson 1986:14) or undulating back and forth across the lip.

Peterson (1986:62-63) outlined several decoration possibilities of the interior rim (beginning at the lip and ending somewhere below it) on SLW vessels, including: cord wrapped tool impressed or tip impressed, dowel, dowel tip, square dowel or tip. Square dowel tip and cord wrapped tool impressed were more common than square dowel or cord wrapped tool impressed tip, so they were combined with the former designations (Peterson 1986:84-85). These decorations may appear in continuous, zig zag, vertical, and oblique left or right. Interior rim notching sometimes produced a crimped effect when it was deep and close enough to produce slight exterior bulges (Cooper and Johnson 1964; Peterson 1986). Impressions on SLW tend to be quite shallow at about 1.0 mm for interior decoration depth and averaging 2.0 mm for lip impressions (Peterson 1986:Appendix 3).

Inner rim decorations occurred between the lip and neck on the interior of some SLW vessels but these were fewer than five per cent (Peterson 1986:67, 82). The techniques used to apply these were similar to those on the lips.

A small number of Peterson's (1986:172) SLW sample had exterior or interior neck decorations. Hartlen (1997:63) noted that one vessel from the Gordon Randall collection, which contains SLW, had interior tool impressions on the lip and neck. Although he categorized it as Vickers focus, this rim sherd (#S-3) is probably SLW (see Section 4.2.8 for further discussion about this matter).

Five vessels from the original SLW sample (Figure 2.2) and the Jamestown Mound vessel (Figures 2.6, 2.7) have interior rim or neck punctates which produced exterior bosses. One corded pot from the Norway Lake site had a row of blunt exterior punctates (Birk 1977a:43). Although Cooper and Johnson (1964) stated that decoration on SLW vessels usually was restricted to interior rim surfaces, they include several profile diagrams with interior punctates/exterior bosses (Figure 2.2). 'Suspension holes' or round perforations are found on some SLW rims from Minnesota (Birk 1979:176). Birk (1977a:45) documented a SLW vessel with interior shoulder decorations at the Norway Lake site (Figure 2.7). Other studies (Arthurs 1978; Birk 1977a; Snortland-Coles 1985) identified exterior and neck/shoulder decorations on some SLW vessels (Figures 2.3, 2.14).

Although Peterson (1986:33) noted that "exterior decorations have not been noted for Sandy Lake Ware", she documented several pots with exterior decoration in her study including trailed line, cord wrapped object impression, smooth object, and dowel tip. These decorations could be found in these applications: continuous, vertical, upper right to lower left (right oblique), upper left to lower right (left oblique), alternating exterior/interior vertical impressions, zig zag, and punctate (ibid. 61-62). Since exterior decoration was found on less than five per cent of the total, it was not included as significant to Sandy Lake potters (Peterson 1986:82). She (Peterson 1986:33) completely excluded smooth vessels which had exterior decorations, suggesting that these were probably Laurel, Oneota, Ogechie series, or something else. However, Laurel ware is almost always thick, conoidal, coarser than SLW, has pointed lips, coil breaks, and is



often elaborately decorated on the rim with different impressions than are found on SLW (Lugenbeal 1976:613-616). Oneota vessels are typically smoothed to burnished, much more elaborately decorated, have a complex profile, and are usually tempered with larger pieces of shell (Cooper and Johnson 1964:475; Gibbon 1995:182). Breakey (1981:39) stated that pointed stick impressions on the rim interior and exterior were common in her SLW sample. Thus, larger sherds of SLW should be differentiable from the other previously outlined pottery wares. Apparently, exterior decoration does occur on vessels which have the same attributes as SLW, which indicates that this possibility should be taken into account when examining sherds in the study area (while bearing in mind the adherence to the stricter attributes for SLW). This idea is particularly relevant given that so many rim sherds do have exterior, upper rim or corner decorations in the study area (e.g. Reid 1972).

Arthurs (1978) noted that the large sample of northwestern Ontario SLW that he studied had decoration which differed from southern examples, including some with exterior punctates and possibly bosses encircling the necks (Figure 2.14). The former decorations are similar to those found on Clearwater Punctate vessels (Hlady 1971). Arthurs (1978:59) stated that some of the objects used to produce lip notching in the northwestern Ontario sample such as blunt cylindrical, smooth curved-end (=dowel), ribbed curved-end, and sharp edged tools (=incised) are not typical of those used to decorate SLW in Minnesota. However, no diagram of these techniques was included in Arthurs' (1978) summary, so it is not readily apparent what the impressions looked like. Koezur and Wright (1976:19) described a SLW vessel in northwestern Ontario with a crenulated lip. This decorative motif is quite common on SLW vessels found in Minnesota.

Rare incised decoration and some occurrences of stamping on SLW probably reflect the influence of other wares (Michlovic and Schneider 1993; Participants 1987;

Peterson 1986). Trilled SLW is believed to be related to Oneota pottery (Michlovic and Schneider 1993).

Peterson (1986) noted that some types of decoration such as cut notching may be temporal indicators. Vessels from the Cooper (Lothson 1972) and Morty (Salzer 1980), both late dating sites, have cut notched decorations. Her reasoning for this idea is based on a low percentage of vessels with this decoration being found at earlier dating sites. It is not apparent from other researchers if decoration on SLW vessels changed with time.

**2.3.9 Colour.** Many archaeologists list detailed assessments of the colour of pottery, often using Munsell chart classifications (e.g. Lugenbeal 1976:745). There are only a few comments which can be accurately made about the colour of Plains or Woodland pottery. One reason for determining the colour attribute is that in general terms, black or grey sherds indicate that the vessel was fired in a reduced oxygen environment, while yellow to red fragments suggest an oxygen rich firing (Anfinson 1979:219). Snortland-Coles (1985:5.4) limited her assessment of pottery colours to two categories representing reduced or oxidized vessels which is a useful way of dealing with this attribute. Malainey (1995a:71) suggested that vessels with oxidized pastes indicate that they may have been placed very close to a fire whereas reduced sherds were probably not as close to the fire. Another possible purpose for determining the colour of sherds is that occasionally red ochre was wiped on a select few precontact vessels (e.g. Hanna 1976:38). However, most Woodland pots were not deliberately coloured as was typical for many slipped or painted wares of the southwestern U.S.A. (i.e. Gratz 1977). In the case of SLW, there are few if any examples of slipped or painted vessels. It has been the author's experience, having partially reconstructed vessels and examined thousands of sherds from a large area, that the attribute of colour does not seem to be very useful (e.g. Figure 2.15) when studying Plains or Woodland pottery (Taylor 1994a:50). Usually, a single vessel will have varied colours (Figure 2.15) either in patches, across individual sherds, or even within the paste. This patchiness may be caused by water marks, firing,

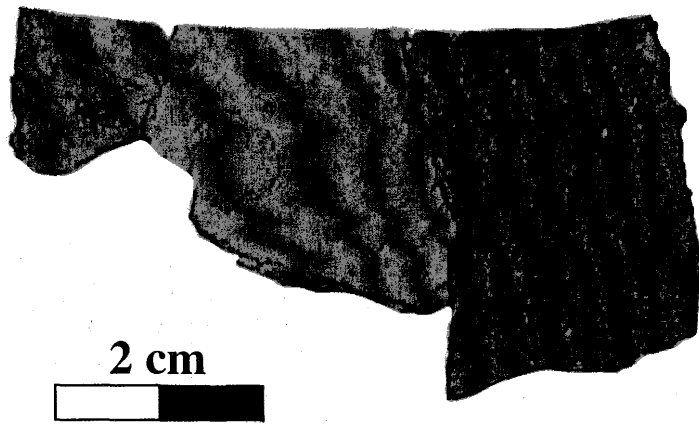


Figure 2.15. Three Sandy Lake ware rim sherds (#285, glued together) from the Wanipigow site in southeastern Manitoba. Note the extreme colour differences between adjoining sherds.

cooking, and post depositional alteration. Colour is mainly determined by the clay, which will vary within the source, firing, and the temper that one used to make the vessel. For a detailed discussion of the effects of pottery colour see Shepard (1976:103). Thus, colour was not recorded for the pottery that was examined in this study, unless it was significantly different from the rest of the sherds at that site.

**2.3.10 Summary.** The previous sections outlined a history of developments in the study of SLW, so that various changes in the ware definition and areal extent could be documented. This review provides one of the more detailed descriptions of this ware to date, since the last major study was in 1986 and new information about SLW has become available. Then, the essential attributes of this pottery which have been documented through the decades were reviewed. Hopefully, this will provide other researchers with a synthesis of SLW details. These attributes are summarized in Tables 2.2 and 2.3 with information from the original SLW classification (Cooper and Johnson 1964) and from Peterson's (1986) study, because it is the most quantitative to date. The author has added a few updates to this list. Although it is rather extensive, obviously not all attributes are found on each vessel, and some of them vary by region (e.g. temper and surface finish).

**Table 2.2. Restricted list of acceptable SLW attributes (compiled from Cooper and Johnson 1964).**

<b>ATTRIBUTE</b>	<b>OPTIONS</b>
<b>Profile</b>	globular; mortuary bowl
<b>Rim Shape</b>	straight to near vertical, occasionally incurved, incipient S
<b>Lip Shape</b>	no thickening, flattened
<b>Neck Interior Shape</b>	horizontal rib-like thickening
<b>Paste</b>	laminated, compact, sometimes exfoliated
<b>Temper</b>	very fine shell or grit
<b>Manufacture</b>	paddle and anvil
<b>Decoration Location</b>	none, interior rim, lip
<b>Decoration Type</b>	plain, round or sharp edged tool, cord wrapped object, exterior bulges (like bosses)
<b>Decoration Motif</b>	plain, notched, paired notches, clustered notches with intervening criss-cross incisions, crimped
<b>Exterior Surface Finish</b>	smooth, vertical cord marking, smoothed over corded
<b>Thickness (rim and body)</b>	3.0-7.0 mm (mean=4.9 mm)
<b>Hardness</b>	2.0-3.0 on Moh's scale

For further information, another SLW attribute list can be found in Gibbon (1976:44). It was originally prepared by Elden Johnson and unpublished (Birk 1979:176). Peterson (1986:Appendix 1) compiled an even more extensive attribute list but it was almost too detailed to easily distinguish what was SLW. The relationships that she determined about grit and shell tempered SLW from northern Minnesota, by extensive chi square analyses, were redrafted and included here (Figures 2.9, 2.10). The purpose for including these determinations is that they are very detailed and may provide other researchers with a useful determination of the ware as found in that area.

The author suggests that the original splitting of SLW into different types by the surface finish seems to be the most logical, since it is usually a distinguishable attribute. Vessels may contain one or several types of temper, while a single surface finish can generally be determined. Due to the few occurrences of shell tempered pottery in the study area (Figure 2.11), Peterson's (1986) proposed type 'Sandy Lake Shell Temper' is of little utility here. Using her classification method, almost all examples would be Grit Temper in type even though they alternate in surface finish, decoration, and other attributes to varying degrees. As discussed previously, there are problems with the ways

For further information, another SLW

**Table 2.3. Expanded acceptable SLW attributes (summarized from Peterson 1986).**

<b>ATTRIBUTE<sup>1</sup></b>	<b>OPTIONS<sup>2</sup></b>
<b>Profile</b>	Straight, S-shaped, INCIPIENT S-SHAPED
<b>Rim Shape</b>	Even, Thicker at Lip, Thicker at Neck
<b>Lip Form</b>	Flattened=Bevelled out, Bevelled in, Square, T-shaped, L-shaped interior, L-shaped exterior, Spayed, and Bevelled out L-shaped); Non-Flattened=Round, Pointed (Beaded)
<b>Neck Shape</b>	None, Rolled, Angled, Braced (Straight)
<b>Neck Exterior Shape</b>	Curved, Straight
<b>Neck Interior Shape</b>	Curved, Ridged
<b>Shoulder Shape</b>	ANGULAR
<b>Paste</b>	Laminated
<b>Temper</b>	Grit, Shell, Grit & Shell
<b>Manufacture</b>	Paddle & Anvil; TEXTILE BAG
<b>Decoration Location</b>	None, Lip, Interior, (Lip & Interior, Neck Interior, Neck Interior & Interior, Exterior, Lip & Exterior, Interior & Exterior, Lip, Interior & Exterior, Neck Interior & Lip, Neck Exterior & Interior, Lip & Exterior Shoulder, Interior & Interior, Interior Rim, Lip & Interior Rim); LIMITED NECK, EXTERIOR PUNCTATES/BOSES
<b>Interior Decoration Technique</b>	Plain, Cord Wrapped Tool, Square Dowel Tip, Dowel (Cord Wrapped Tool Tip, Dowel Tip, Cut Notched, Trailed Line)
<b>Interior Decoration Motif</b>	Vertical, Right to Left, [Continuous, Zig-Zag, Left to Right; these were included even though less than 5 per cent]; CLUSTERED
<b>Lip Decoration Technique</b>	Plain, Cord Wrapped Tool [Trailed Line, Dowel, Cut Notched; these were included even though less than 5 per cent]
<b>Lip Decoration Motif</b>	Across, Oblique Left, Oblique Right (Channel, Zig-Zag, Wave Right, Wave Left, Saw Tooth Right, Saw Tooth Left, V-V-V, Roll, Cluster, Oblique Punctate Along Lip, Circular Punctate)
<b>Cordage Twist</b>	S z/z (Z s/s)
<b>Lip Surface Finish</b>	Plain, Cord Marked, Smoothed Over Cord Marked (Plain Object)
<b>Exterior Surface Finish</b>	Smooth, Smoothed Over Cord Marked (OBLITERATED), Cord Marked (Stamped, Fabric impressed, Smoothed Over Fabric Impressed); TEXTILE IMPRESSED
<b>Thickness (Lip)</b>	2.0-9.0 mm--mean 5.3 mm
<b>Thickness (Rim)</b>	2.0-10.0 mm--mean 5.6 mm
<b>Thickness (Neck)</b>	3.0-14.0 mm--mean 6.3 mm
<b>Rim Height (midpoint)</b>	4.5 mm-67.5 mm--mean 31.5 mm
<b>Hardness</b>	2.0-3.0 on Moh's scale

<sup>1</sup>Most of these attributes also have the option indeterminate.

<sup>2</sup>Attributes that Peterson (1986) removed, because of occurrences less than five per cent, are in brackets. The Author's additions are in capital letters.

<sup>3</sup>Birk (1979) proposed the Stamped type, which included check and simple stamped vessels. Although Peterson (1986) did not find significant numbers of this type, and did not include it, the type remains in the literature and has been reported at other sites.

in which wares are classified (Rice 1976), particularly in central North America. Since the paste (temper) and surface finish of a particular ware are supposed to be uniform, SLW does not conform to this classification either as previously suggested by Cooper and Johnson (1964) or Peterson's (1986) proposed changes in types. Also, these are independently chosen variables as suggested by Rice (1976).

**CHAPTER THREE:**  
**THE *PSINOMANI* CULTURE AND OTHER DETAILS ABOUT**  
**SANDY LAKE WARE**

***3.1 Introduction***

Pottery is often the most diagnostic Late Woodland artifact in the Eastern Woodlands, Northeastern Grasslands, Aspen Parklands, and adjacent Boreal Forest environmental zones. Although SLW provides the best identification of the *Psinomani* culture, other information is available from the multitude of sites where this pottery is found. However, as this thesis attempts to synthesize all available information dealing with this culture, the following sections deal with: geographic details, cultural affiliation, other associated artifacts, subsistence, settlement patterns, dating, origins, and possibilities of what happened to the people who made this pottery.

***3.2 Geographical Extent***

As was typical of most precontact Native peoples, the groups who made SLW likely utilized the river and lake systems for drinking, cleansing themselves, locating game, and travelling. This idea is suggested by the many SLW sites that are located by water bodies, particularly those with stands of wild rice (Johnson 1969a). Although there are thousands of lakes in Minnesota, Wisconsin, Ontario, and Manitoba, many of the major lakes have Sandy Lake sites nearby, such as: Leech, Mille Lacs, Upper and Lower Red, Winnibigoshish, Rainy, Lake of the Woods, Nipigon, Mud, Nett, Superior, Whitemouth, and Winnipeg. Some of the major rivers, which were likely used by Sandy Lake people, as indicated by sites found nearby are: the Mississippi Headwaters; Red, Rainy, Winnipeg and others connecting to Lake of the Woods; those in Quetico Park; Seine; and



other lesser ones (Figure 1.1). Arthurs (1978:59) reported SLW being found along the English River system, the Boundary waters transportation system, and the Lake Superior network. The author (Taylor 1994a) suggested previously that the James, Sheyenne, and Souris rivers were likely utilized by the inhabitants of the Duthie site, where SLW has been identified. Given that large numbers of SLW sherds are found in eastern North Dakota along the James River (e.g. Gregg 1994; Michlovic and Schneider 1993), and that sites between contain SLW (Figure 2.1), this seems plausible. Syms (1979b:296, 301) implied that peoples from North Dakota seasonally followed the rivers between the Aspen Parklands and the Missouri Coteau, into southern Manitoba and Saskatchewan between about A.D. 900-1400 or later. Flynn (1993:6) suggested that the inhabitants of the Lockport site near Winnipeg, which contains some SLW and Oneota-like pottery, moved along the Red River into southern Manitoba. Hartlen (1996a:71) proposed the use of another pertinent waterway route during the Pacific climatic episode at about A.D. 1500. He (Hartlen 1996a:71) suggested that Sandy Lake peoples may have travelled along the Red and Pembina Rivers to the Randall sites. Similarly, Nicholson and Hamilton (1997:31) suggested that at about 500 years ago, Plains Woodland groups migrated along the Mississippi Valley and northward along the Red River; at about this time the Shea site (Michlovic and Schneider 1993) and Lockport (Flynn 1993) site were occupied by Sandy Lake peoples. They postulated that the people who occupied Vickers focus sites (largely *Psinomani* culture) moved west into the Pembina River area and then to the *Makotchi Ded Dontipi* locality in southwestern Manitoba after about A.D. 1500 (Nicholson and Hamilton 1997:31). The myriad of population movements proposed in this section probably do not even come close to including all of the diverse movements followed by *Psinomani* peoples but it does provide an inkling as to their behaviors.

Cooper and Johnson (1964:479) studied archaeological collections from Minnesota and Wisconsin, noting a particular concentration of SLW in the Mississippi River Headwaters region (Figure 1.1). Another cluster exists in the Boundary Waters

region of Northern Minnesota and another in Canada from Quetico Provincial Park, Ontario into southeastern Manitoba (Participants 1987:57).

Arthurs (1978:59) has defined the northern boundary of SLW distribution as Birch Lake on the English River system in Ontario, while Peterson (1986:19) noted that the southern limit is the Mille Lacs region of central Minnesota (Figure 1.1). More contemporary information indicates that it has been found as far southwest as the Lake Traverse region (Anfinson 1997:119) on the border between northeastern South Dakota and eastern Minnesota (Figure 1.1). One example is the fortified Browns Valley site (21TR5) of the Big Stone phase which is located in Traverse county at the southeast of Lake Traverse, Minnesota; it has Paleoindian and Plains Village components. Anfinson (1997:108) noted that one vessel most closely resembled the Lisbon Tool Impressed type, now subsumed under SLW by Michlovic and Swenson (1998:16), although its angular neck is not typical. Another rim sherd (Anfinson 1997:109, Figure 53c) resembles Sandy Lake Smooth, notched variant. A third example (Anfinson 1997:110, Figure 54a) is alike the SLW vessel from the Jamestown Mounds described by Snortland-Coles (1985). There are some surface collected shell tempered sherds but these could also be Oneota. Justin and Schuster (1994:83) noted one of the southernmost occurrences of a Sandy Lake site in Douglas county, Minnesota. Lofstrom (1988:49) suggested that site 21CH35 was the farthest east location of SLW in the same state, being on the Minnesota/Wisconsin border, but it is also the farthest south in the distribution.

Birk (1979:175) and Peterson (1986:19) noted that the eastern boundary of SLW recoveries is along the St. Croix River and its tributaries to the east in Wisconsin. Only three sites with SLW have been noted in Wisconsin: Fickle (Cooper and Johnson 1964:474), Morty (Kolb 1988:100; Salzer 1980) and unnamed ones in the Apostle Islands (Salzer 1986:309). The western distribution probably ends at the Sheyenne and James Rivers including Devil's Lake, North Dakota (Peterson 1986:19). Other researchers have suggested that the range of SLW goes farther northwest, particularly

since most archaeologists associate it with the proto-Siouans and later Assiniboines who lived in the area (Meyer and Hamilton 1994:125; Taylor 1994a). The results from this author's study will be presented in Chapter Five, after which a new assessment of the northwestern distribution of SLW will be presented.

**3.2.1 North Dakota.** Although it was not included in the original distribution by Cooper and Johnson (1964) (Figure 1.1), SLW has been identified in eastern North Dakota for some time (Birk 1979:175; Michlovic and Schneider 1988, 1993; Peterson 1986:19; Schneider 1982; Snortland-Coles 1985). Given that there are fairly recent developments in this regard, particularly dealing with classification, it is worthy of discussion in this thesis (see Chapter Four for a more detailed assessment of classification problems).

Almost all late precontact sites in the eastern one-third portion of North Dakota contain SLW sherds (Fred Schneider, personal communication, 1999). One survey of the middle Red River Valley in Norman County, Minnesota, which is adjacent to eastern North Dakota, located at least 30 sites and most of the pottery collected from them was SLW (Breakey 1981:39; Michlovic 1982:67). A series of major surveys, principally the Smithsonian Institution River Basin Surveys (Picha and Gregg 1994:67) near Devils Lake and along the upper James River in North Dakota (e.g. Gregg et al. 1985, 1986; Kordecki et al. 1993; Schneider 1982; Wheeler 1963) also revealed many sites with pottery similar to SLW. Although Gregg et al. (1985, 1986) were suitably cautious about assigning cultural affiliation to the vessels recovered on their surveys, it is apparent from the description and some illustrations that SLW is present (Table 3.1). Often these vessels would be referred to as Plains Woodland, either Blackduck or SLW; however, this author does not see as many similarities to the former. While many of these sherds are quite small, even a conservative approach using these restricted attributes reveals that several vessels are probably SLW (Table 3.1): thin; straight rim; grit or shell temper; smoothed (one is smoothed over simple stamped) or cord roughened; and tool

**Table 3.1. A few examples of older reports from eastern North Dakota sites which may have Sandy Lake ware.**

<b>Sandy Lake Type, Variant Site (Number)</b>	<b>Vessel or Sherds</b>	<b>Reference</b>
<b>Corded, Plain</b>		
Dill (32SA206)*	Vessel #2	Gregg et al. 1985:41
Naze (32SN246)**	Vessel #1	Gregg et al. 1985:100
	8 grit and shell sherds	Gregg et al. 1985:98
<b>Smooth, Notched</b>		
Beeber (32LM235)	Vessel #2	Gregg et al. 1985:186
Chappell II (32LM244)	Vessels #1, 4, and 5	Gregg et al. 1986:250-252
Martin II site (32LM401)	Vessel #1	Gregg et al. 1986:177
Gohner I (32SN215)	Vessel #1	Gregg et al. 1986:85
	shell tempered body sherd	Gregg et al. 1986:88
<b>Oblit. Simple Stamped, Notched</b>		
Kirschenmann III (32SN247)	Vessel #2	Gregg et al. 1986:135
<b>Smooth or Corded</b>		
Beeber (32LM235)	1 shell tempered sherd	Gregg et al. 1985:184

\*suggested by the authors as possibly being SLW or Initial Middle Missouri tradition

\*\*indicated by the authors as being "reminiscent of Late Plains Woodland ceramics such as Blackduck"  
Oblit.-obliterated

impressed on the interior lip/rim juncture. It should be noted that previously Schneider (1982:119) listed the Naze, Beeber, Chappell, and Kirschenmann III sites as having Late Plains Woodland components, although only the Beeber site vessel was assigned to Blackduck/SLW. Almost all of the sherds recovered from the many sites on these surveys have the four surface finishes assigned to SLW, which are smoothed, corded, simple or check stamped. The radiometric and relative dating also indicates that time frames overlaps with SLW in Minnesota. Thus, SLW is recognized more often than it used to be in North Dakota sites.

Gregg et al. (1986:274) suggested that some of the recovered cord roughened body sherds could be SLW, although these sherds were not diagnostic enough to be sure. There are likely many more examples of SLW that have been identified as another ware. Gregg et al. (1985:42-43) noted that SLW and Initial Middle Missouri are expected to

occur in the upper James River Valley study area and cord roughening is a common exterior surface treatment on them. Given that there is so much overlap between SLW, Northeastern Plains Village pottery, and other wares from that area, it is most likely that a great deal of interaction was taking place in what is now Eastern North Dakota.

**3.2.2 Manitoba.** The western boundary of SLW is in southwestern Manitoba (Figure 1.1) in the *Makotchi Ded Dontipi* (meaning “the place where they live”) locale (Nicholson and Hamilton 1997:24) with individual vessels being identified from the Duthie site excavations (Taylor 1994a). Even though Cooper and Johnson (1964:479), from MacNeish’s (1958) assessment, suggested that SLW was present in southeastern Manitoba many decades ago this ware has largely been unrecognized. Few researchers have identified SLW in Manitoba sites even though descriptively identical examples exist. Recent evidence suggests that more SLW is present there than previously thought, particularly with the association or inclusion of this ware with Vickers focus site pottery (see Chapter Four).

**3.2.3 Saskatchewan/Montana.** Recently, a number of researchers have suggested the possible presence of SLW or closely related wares in Saskatchewan (Dyck and Morlan 1995:193; Malainey 1995b:183; Meyer and Hamilton 1994:125-126; Walde 1994:145-146). Based on similar surface finishes and decoration, Walde (1994:146) tentatively suggested that Mortlach pottery, which is commonly found in the southern part of that province, may have succeeded SLW and represented a continuation of the *Psinomani* culture in south central Saskatchewan, northeastern Montana, as well as northwestern North Dakota. However, he (Walde 1994:146) noted that more research in southwestern Manitoba and southeastern Saskatchewan was required to ascertain whether SLW was found that far west. Malainey (1995b:183) noted more similarities with her Wascana ware, of the Moose Jaw culture, than with the more southern Mortlach pottery. She agreed with Walde (1994:173) that the central Saskatchewan pottery was likely made by ancestors of the postcontact Assiniboine (Malainey 1995b:184). This idea has also

been postulated for SLW (Participants 1987:57). Thus, there are similarities between pottery found in Saskatchewan and SLW; these problems are discussed in more detail in Chapter Four.

### 3.3 Cultural Affiliation

Johnson (1969:34) suggested that the distinctive SLW was likely part of an undefined focus in northern Minnesota that succeeded Blackduck, and suggested that the late precontact archaeological record in that state was much more complex than previously thought. Later, Birk (1977a:30-31; emphasis his) proposed that SLW be considered part of an archaeological culture:

Though the total range and distribution of cultural expressions associated with 'Sandy Lake' have yet to be defined, it would seem that with a 700-year old ceramic tradition and a growing list of known cultural characteristics that 'Sandy Lake' could easily be elevated to the level of a full fledged culture. Using currently accepted jargon, a 'culture' is interpreted as a maximizing unit of abstract description that reflects a major segment of culture-history and may be composed of a number of spatially or temporally inferior phases (Willey and Phillips [1958]:47-48). It has been suggested, and I strongly agree, that any redefinition of 'Sandy Lake' into cultural terms should be done using names that do not conflict, or cannot be confused with the ware classification (Elden Johnson, personal communication). . . . The regional and temporal extent of this suggested culture would tentatively match the known geographical and temporal distribution of the previously defined Sandy Lake Ware.

He named the culture *Wanikan*, which is an Ojibwa word meaning 'hole in the ground', signifying the importance of rice threshing pits to the people who made SLW (Birk 1977a:31). Cooper and Johnson (1964:479) implied that SLW was related to postcontact Chippewa (Ojibwa) groups that occupied the area where this ware was identified, because they cited similarities to Quimby's (1960:125) description of Chippewa pottery. This idea explains why Birk (1977a) used an Ojibwa word to denote the culture. After the mid 1700s, the Ojibwa replaced the Mdewakanton Dakota in the Mille Lacs Lake region (Johnson 1985:154), which may have also caused *Wanikan* people to be interpreted as Ojibwa.

Based on Cooper and Johnson (1964), Gibbon (1976:25), and others, characteristics associated with this culture included but are not confined to:

Sandy Lake ceramic wares; intrusive mound burials; exclusive circular conical mounds with shallow burial pits; primary flexed interments with associated mortuary vessels; small triangular projectile points (predominantly quartz?); formally prepared ricing jigs or threshing pits; fire hearths and pits; middens; small, seasonally occupied sites in recognizable lakes area patterns; and the inferred use of wild rice as a staple food crop (Birk 1977a:31).

Although he placed this cultural subunit within the Late Woodland tradition, Birk (1977a:31) refrained from defining “clear cut phase designations” since he did not believe that there was enough known about the culture, particularly since few stratified sites with SLW sites had been found. Also, at that time, no significant changes in style had been demonstrated within the ware, and Birk (1977a:31) suggested that phases might be developed on the basis of other changing cultural associations (Kathio, Ogechie series, etc.). Only one phase designation has been introduced, that is associated with SLW, which is the Bradbury phase (Johnson 1985) (see Section 4.5).

Later, it was suggested that the Ojibwa term *Wanikan* was inappropriate for a culture which was more likely proto-Siouan (Gibbon 1994:146). Therefore, the Dakota (Siouan) term *Psinomani* or ‘wild rice gatherer’ was proposed by Gibbon (1994:146). Although there are researchers who use each term, there seems to be general agreement that most of the traits mentioned above are applicable to the culture in Minnesota and northwestern Wisconsin.

Although the preceding description of *Psinomani* is not confined to the traits listed, this larger cultural affiliation seems to be most relevant for the regions where SLW was originally identified (Cooper and Johnson 1964), since these sites are often associated with wild rice sources (e.g. Figure 3.1; Johnson 1969a) and burials (e.g. Johnson 1973). The *Psinomani* traits which occur in sites outside of the wild rice zones are SLW, small triangular points, fire hearths and pits, middens, and possibly seasonally occupied sites in recognizable lakes area patterns. Unfortunately, except for the first two

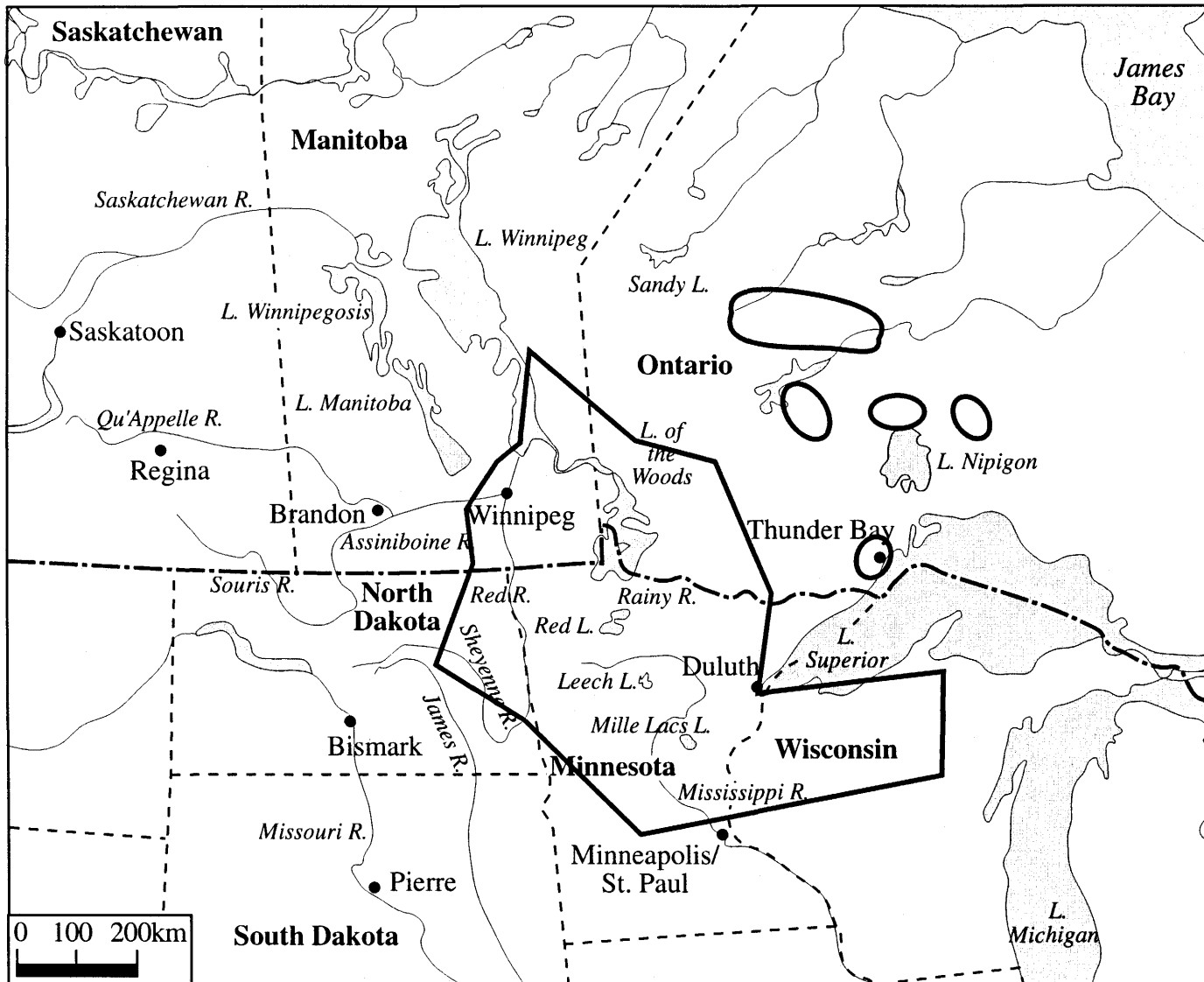


Figure 3.1. Inferred, generalized precontact distribution of *Zizania sp.* pertinent to this study (after Aiken *et al.* 1988:35; Dore 1969; Salzer 1974; and various Minnesota/North Dakota sources).



items, this list is generally what might be expected of almost any Late Woodland site. Also, small side-notched projectile points (Kehoe 1966; MacNeish 1958) rather than just triangular points are associated with SLW vessels in Manitoba (Taylor 1994a:15) and other areas (Michlovic 1983:24). Nevertheless, Birk's (1977a:31) assertion that the regional and temporal extent of this culture should tentatively match the geographical and temporal distribution of SLW suggests that the *Psinomani* culture should be recognized in Manitoba and North Dakota.

Dealing with the other exclusive *Psinomani* traits related to wild rice harvesting and burials, it is apparent that SLW is found outside of regions where this plant is found (Figure 3.1). Outside of northern Minnesota, northwestern Wisconsin, northwestern Ontario and southeastern Manitoba, sites with SLW exhibit evidence of different economic foci, primarily bison hunting. A review of information about human burials (typically mounds) in southern Manitoba and North Dakota (Capes 1963; Ens 1998a; MacNeish 1954; Snortland 1994; Swenson and Gregg 1988; Syms 1979b) indicated that most are related to Blackduck, Plains Village, or the Northeastern Plains Village complex which now includes Syms' (1979b) Devils Lake-Sourisford complex (Michlovic and Swenson 1998:20). Hence, the term *Psinomani* seems to be less relevant for the sites in the Northeastern Grasslands and Aspen Parklands (Figure 1.3) which are addressed in this research, since most are not wild rice harvesting sites and are not associated with burials. However, these sites may have been occupied seasonally by people identified by the material remains of the *Psinomani* culture or they may reflect the movement of some groups into new areas.

Classifying pottery as a distinct ware does not necessarily indicate it was made by the same group of people, although it is likely that a ware was made by the same cultural group (Meyer and Hamilton 1994:125). Thus, while there are problems with applying the current cultural classification of *Psinomani* to materials in southern Canadian sites, many researchers use this term to denote assemblages characterized by the association of SLW

with certain artifacts and features. Arthurs (1978) chose to use the *Wanikan* cultural term (used at that time) for samples in northwestern Ontario, so this author will use *Psinomani* to describe similar materials in southern Manitoba.

### **3.4 Material Remains Associated with the *Psinomani* Culture**

Sandy Lake ware is occasionally found as the only pottery in 'pure' components such as at the Basswood Shores site (Justin and Schuster 1994) and in burial mounds like the Onigum Marina site (Birk 1977b). Essentially, the pottery is the most diagnostic item found in *Psinomani* components. Typically, it occurs in small numbers with materials of other phases or complexes in this northwestern study area. However, some sites in Minnesota have yielded relatively high numbers of SLW vessels (e.g. Michlovic 1987). It has been found with other types of artifacts or features (e.g. Birk 1977a:31; Gibbon 1994:146-147) in Woodland or Northeastern Plains Village sites. Although Peterson (1986) completed a detailed analysis of SLW from some sites in Minnesota, she did not discuss associated artifacts and features in much detail. Hence, it seemed logical to include in this study a synthesis of information about cultural materials other than the ware itself. Information about faunal remains found in *Psinomani* sites is presented in Section 3.5, dealing with subsistence strategies, which are usually inferred from faunal assemblages.

**3.4.1 Bone Tools.** There is little information about bone tools characteristic of *Psinomani* assemblages, since most reports describe multi-component sites and deal with these items on an intra site basis. Sometimes bone tools are informative, although unfortunately, they are not diagnostic of a particular culture (in this case *Psinomani*). Rather, they are usually more dependent on where the site is located. For example, Eastern Woodland and Boreal Forest sites would likely have harpoons and fishhooks which may have been used for fishing (e.g. Meyer 1998).

Birk (1977a:41) noted one unidentified bone tool from the Norway Lake site, where SLW was recovered, in central Minnesota. Shaped antler was recovered from the

Old Shakopee Bridge site (Gibbon 1976:16) in Minnesota, which has many SLW vessels, but it is uncertain if this tool is associated with that component. Spatulates which may have been used for pressure flaking stone tools as well as expediency tools, manufacturing debris, and ornaments have been found at Northeastern Plains villages that have SLW such as the Horner-Kane site (Haury 1994:10.3). Another explanation for these bone spatulates is for smoothing pottery (Taylor 1996a) such as the Sandy Lake smoothed type. A spatulate and several other small bone tools which may have been used for decorating pottery were recovered from the Duthie site in southwestern Manitoba (Taylor 1996a:95), although these were not directly associated with the SLW recovered at this site. Modified bison scapulas, spatulas, and drilled bone found at these Northeastern Plains villages are also characteristic of the Oneota phase (Gibbon 1986:326). Similarities between some SLW and Oneota pottery, which are occasionally found together (e.g. Michlovic and Schneider 1993), suggests a cultural connection. Thus, *Psinomani* assemblages usually contain bone tools similar to those found in Woodland, Northeastern Plains, or Oneota sites.

**3.4.3 Features.** There are not many examples of features associated with SLW although these can be typical hearths, middens (Birk 1977a:31) or refuse pits (Gibbon 1976:8). However, there are several distinctive features frequently found in *Psinomani* sites in central Minnesota and occasionally elsewhere (e.g. Dawson 1987). These features include formally prepared ricing jigs (Figure 3.2), which are often basin-shaped and lined with clay (Gibbon 1976:6; Valppu 1989:24), or threshing pits (Birk 1977a:31). The usage of these jigs is detailed in Section 3.5.1 which is a discussion of wild rice harvesting. Gibbon (1976:8) noted numerous postmolds which outlined an oval house and its entrance at the Old Shakopee Bridge site, where many SLW vessels have been recovered. However, this house may have related to an earlier occupation of the site such as St. Croix, Onamia, or Kathio (Gibbon 1976:25); no absolute dating has been completed for this site. The late dating Bradbury phase, of which SLW is a one of the

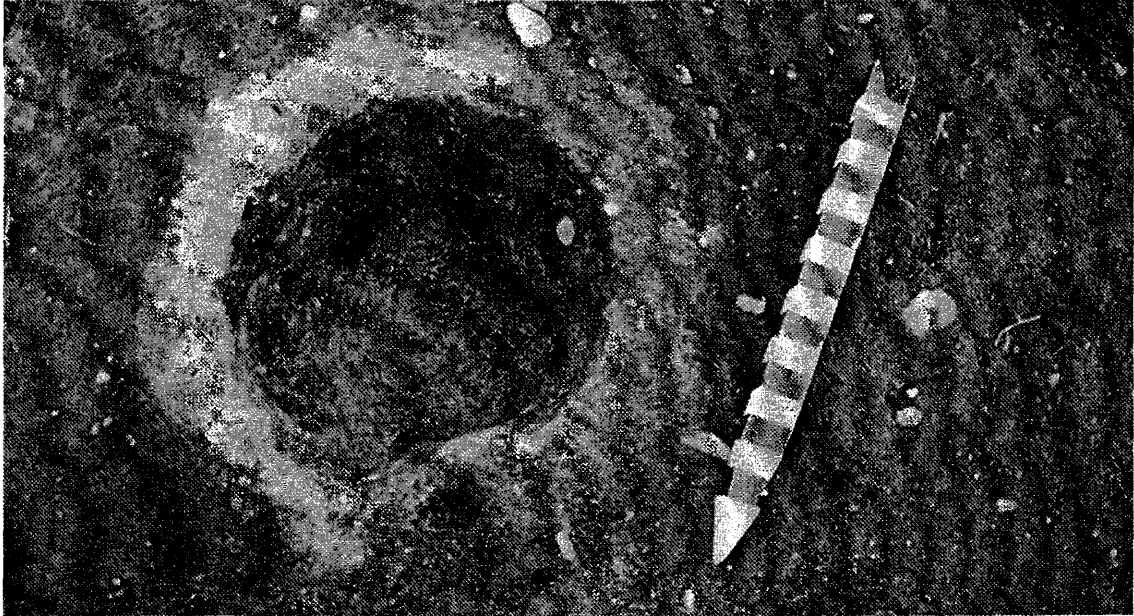
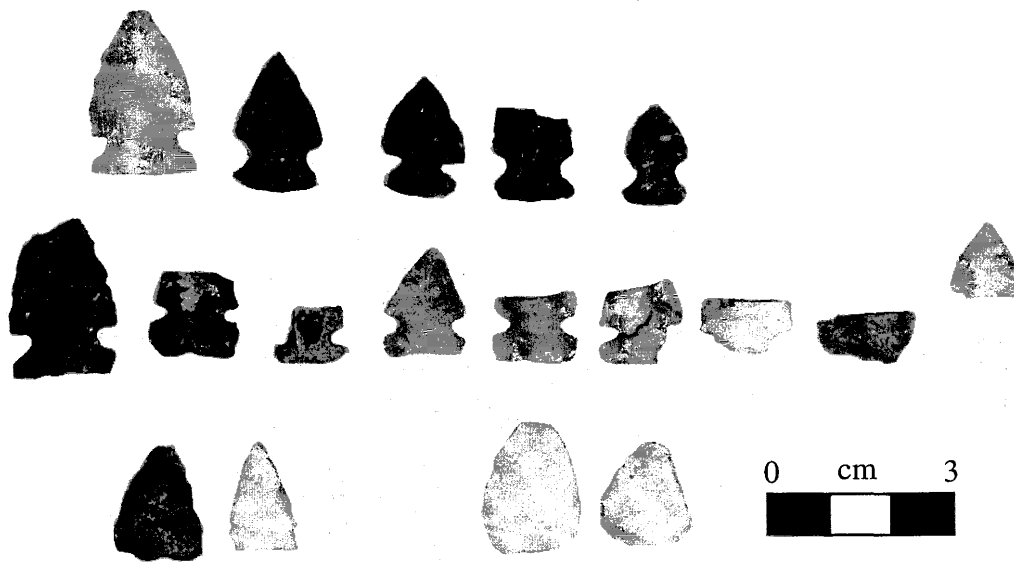


Figure 3.2. An excavated feature, thought to be a wild rice threshing pit, from an unnamed Woodland site in Minnesota (from Johnson 1978:13). Note that the lighter coloured area is a clay lining.

characteristic artifacts, is known to have sites with several different types of houses perhaps reflecting Oneota influence (Birk and Johnson 1992:211). Hence, although there are many sites in central Minnesota which have features identified with wild rice harvesting, there are few other sites that have SLW associated with different features.

**3.4.3 Projectile Points.** Although projectile points found with SLW are diagnostic of the Late Woodland time period, as opposed to earlier times, the triangular and side-notched types are not particularly diagnostic of any one archaeological culture (Figure 3.3). Rather, as Carmichael (1981:35) noted, Late Woodland points are quite uniform in size and shape with regional peculiarities not being noted. Instead, it is usually pottery which is the most diagnostic artifact type in these sites (Nicholson 1996:69). It is striking that there are only three projectile point types that coincide with several hundred pottery types in late precontact sites (e.g. Butler and Hoffman 1992). Gibbon (1994:146) noted that “except for ceramics, the *Psinomani* material culture has been considered very similar to that of Kathio and early Blackduck (sic) . . .” Regardless of these limitations, some comments can be made about projectile points found with SLW. In Minnesota and Wisconsin, the majority of them are unnotched triangular (Birk 1977a:31) or what some researchers have labelled Eastern Triangular (MacNeish 1958:103). Similar projectile points found at Grasslands sites are called Plains Triangular (e.g. Capes 1963:130). Late sites with SLW in North Dakota (Gregg 1987), northwestern Ontario (Rajnovich 1983), and Manitoba (Taylor 1994a:102; Trottier 1973:18-20; Walker 1996b:36) have associated Plains or Eastern Triangular, Prairie Side-Notched, and Plains Side-Notched (Figure 3.3) projectile points (Rajnovich 1983:36). In summary, SLW is commonly found with triangular points but it may also be found with Plains Side-Notched and Prairie Side-Notched points.

Unfortunately, attempts to differentiate temporal changes and variance between triangular and side-notched points have not been very illuminating (Whelan 1976:5), despite previous classificatory schemes by MacNeish (1958), Kehoe (1966), and



**Top row:** A)Swan River Chert (SRC); B, E)Knife River Flint (KRF); C, D)brown chalcidony  
**Middle:** F-H)KRF; I-L, N)SRC; M)misc. chert  
**Bottom:** O)heat treated SRC or misc. chert; P-R)SRC

Figure 3.3. Late Precontact projectile points from the Duthie site in southwestern Manitoba (from Taylor 1994a:102). Top row: Prairie Side-Notched; Middle: Plains Side-Notched; Bottom: Plains Triangular.

Nicholson (1976). Often, researchers do not mention what the correlation is between pottery and projectile points, which makes possible associations even more elusive. In Alberta and Saskatchewan, Prairie Side-Notched points are typically associated with Old Women's phase pottery, while Plains Side-Notched are found with later Mortlach pottery. Gregg (1994:14.16) noted that a similar temporal difference might exist between the two point styles in eastern North Dakota. However, the collapsed stratigraphy of multi-component sites in Forest sites, is often to blame for not being able to sort out if one point type is associated with a particular kind of pottery (Arthurs 1986:223; Gibbon 1976:23; Rajnovich 1983:36). For example Eastern Triangular projectile points are found with earlier Blackduck pottery and later Selkirk as well as SLW pottery (Rajnovich 1983:36).

**3.4.4 Other Lithic Tools.** However, it is more likely representative. Bifacial knives have been recovered in the upper levels of Sandy Lake sites such as Battle Island in Minnesota (Gibbon 1987:5). Scrapers, utilized flakes, flakes and other debitage (Birk 1977a:20) have been discovered with SLW at many sites. Gibbon (1976:10) noted that two quartz bipolar cores were found at the Old Shakopee Bridge site in Minnesota. Gibbon (1976:15) reported the following ground or pecked artifacts of which at least some relate to SLW: net weights, an anvil, hammerstones, grinding stones, and a grinding basin. Since this site is a fishing and wild rice harvesting spot, even today, many of these items may be related to these activities. Occasionally, ground stone tools have been found at other SLW sites (e.g. Birk 1977a:24; Nicholson and Malainey 1995; Taylor 1992; Walker 1996a:104). Naturally, fire cracked rock is recovered at sites with SLW (Birk 1977a:21), since many vessels are grit tempered and this is derived from fired rocks. These stones are often found in hearths and other features. Lovick (1983) provides many examples of the other uses of fire cracked rock, as interpreted from a Plains Village site.

**3.4.5 Lithic Materials.** Although Birk (1977a:31) noted that many projectile points associated with SLW were made of quartz, the material types were usually

dependent on the lithic resources available in the region where the artifacts are found or what was traded in an area. A few examples of the lithic materials found at SLW sites from several environmental zones are presented. Minnesota sites have jasper, brown chalcedony, basalt, and various quartzites (Gibbon 1976:10). Sites in northwestern Ontario and southeastern Manitoba that contain SLW often have lithics made of materials derived from the Canadian Shield such as local chert, rhyolite, quartz, Hudson Bay Lowland chert, and Gunflint Silica (Rajnovich 1983:31). In the Red River Valley, between Minnesota and North Dakota, many of the stone tools are made of Knife River flint (KRF), although Tongue River silicified sediment (TRSS), chert, quartzite, quartz, and occasionally Catlinite are found (Michlovic 1983:25). Lithic materials which might be found in the Northeastern Plains Village sites along the James, Sheyenne, and Maple Rivers in North Dakota include: Tongue River silicified sediment, quartzite, Swan River chert and other cherts, quartz, agate, silicified wood, KRF, and other chalcedonies (Gregg 1994:4.19). Swan River chert (Low 1996), other local cherts, KRF, some obsidian, porcellanite (a.k.a. fused shale), and quartzite are mainly found within the study area (e.g. Taylor 1994a). Therefore, a diverse array of local and imported lithic materials were left behind in *Psinomani* assemblages.

### **3.5 Subsistence Patterns**

The subsistence habits of the people who manufactured SLW were apparently as diverse as the resources available, which differed in accordance to the environments that they occupied. Although these patterns are poorly documented, Gibbon (1994:147) argued that Sandy Lake subsistence habits were different from those of the preceding Blackduck, Kathio, and Clam River cultures in Minnesota:

Unlike the extensive settlement pattern of the [Blackduck-Kathio-Clam River] continuum, for example, the majority of large camps and villages of the *Psinomani* culture are clustered in a small number of widely separated localities; intervening areas are virtually abandoned except by seasonal extractive groups. Relatively large semipermanent palisaded villages, warfare, further population growth, the development of more formal



sociopolitical alliances, and the intensification of wild rice harvesting in conjunction with a new roasting and storage technology appear at this time.

Although this argument provides a useful summary, there is really no proof that the *Psinomani* people participated in warfare. Given the dynamic social climate of the time, it may have occurred. Also, Valppu (1989:56) found evidence that Laurel groups were processing wild rice, all grains being charred, at the Big Rice site. While there are certainly more ricing pit features at *Psinomani* sites and harvesting may have been more widespread or intensive, they may not have been the first to roast and store this cereal. More information about wild rice is presented in Section 3.5.1 as it warrants a detailed discussion.

Apparently, the Late Woodland period peoples as a whole used a variety of subsistence strategies, which may have differed from the Middle Woodland. Gibbon and Caine (1980:57) noted that during the transition from Middle to Late Woodland times in eastern Minnesota changes occurred in climate and pattern of spatial distribution. They also stated that an area integration of sites from diffuse to focal patterns accompanied by an increase in wild rice procurement and processing caused the population to increase (Gibbon and Caine 1980:57). At the Long Sault site in Ontario, Arthurs (1986:224) reported a dramatic shift from an apparent dependence on fish in the Middle Woodland component to a reliance on mammals in the later Selkirk and Sandy Lake occupations. He also noted that there was much more faunal diversity (although this may relate to preservation factors), and a definite trend towards harvesting aquatic mammals (Arthurs 1986:224). Given that the second latest component at this site is dated to A.D. 1650, or during the fur trade when these animals were much sought after (Arthurs 1986:223), this seems logical. Thus, there may have been changes from Middle Woodland to Late Woodland subsistence practices, as indicated at some sites with SLW.

Although Birk (1977a:29) noted a disparity of lithics at the Norway Lake site, he suggested that this may have been due to the observing capacities of amateur collectors.

Probably the inhabitants only operated a narrow range of economic, perhaps seasonal, activities at that site. Since wild rice stands are close to the Norway Lake site, it may be that it was used as a base for harvesting this cereal crop (Birk 1977a:30). Some *Psinomani* culture habitation sites have few faunal remains (Birk 1977a:29; Justin and Schuster 1994:82). Justin and Schuster (1994:82) reported the remains of one white-tailed deer (*Odocoileus virginianus*), probably from a single cooking event, at the Basswood Shores site in Minnesota.

Faunal remains in Sandy Lake sites are largely determined by the environmental resources found in the region at the time of occupation (Shay 1985:31), and they indicate that the inhabitants used several different subsistence strategies. In terms of the dominant large ungulates present, Shay (1985:31) stated that bison (*Bison bison*) were mainly hunted in the Prairies, white tailed deer were the most abundant ungulates in the Deciduous Forests, and moose (*Alces alces*), as well as woodland caribou (*Rangifer tarandus*) were the staples in the Mixed Conifer-deciduous and Boreal Forest (see Figure 1.3 for these environmental divisions). Thus, in the eastern SLW sites, faunal remains tend to be dominated by a typical Eastern Woodlands faunal assemblage including moose and white tailed deer (Shay 1985:31), along with beaver (*Castor canadensis*), fish, and some birds. Many Sandy Lake sites in Minnesota indicate that the inhabitants utilized fauna from local aquatic and woodland environments such as deer, turtle, beaver, fish, and molluscs (Birk 1977a:30). Mollusc shells were used by people who made SLW, as these were found at the Norway Lake site (Birk 1977a:23), and is evident from shell tempered vessels. Thus, a wide variety of subsistence strategies were available to those dwelling in the Eastern Woodlands.

Spector (1985:191) presented an inventory of Eastern Dakota artifacts recovered in the 19th century Little Rapids site and suggested that Natives in central Minnesota also participated in: muskrat procurement trips; seasonal deer hunting; cranberry harvesting; fishing; small scale horticulture; and maple sugar collecting. Some of these ideas are

reflected in the faunal and flora assemblage of the Little Rapids site which indicate how much is probably missing in precontact sites because of poor or no preservation. Loftus (1977) discussed a late postcontact Ojibwa sugaring site in Wisconsin which may indicate similar events that occurred in late precontact times. Although there is no way to prove that maple tree sap gathering took place in precontact times, it was an important spring activity for some Ojibwa bands after European contact (Loftus 1977; Lugenbeal 1976; Quimby 1960:123), suggesting that this practice was known long before they arrived. Table 3.2 illustrates some of the 19th century Eastern Dakota seasonal rounds which may have been employed by *Psinomani* peoples. It is likely that these additional subsistence strategies were also in operation during precontact times in the Eastern Woodlands. Those who made SLW may have used these same subsistence strategies, given that they might be ancestral to the Eastern Dakota (Michlovic 1985:136). Hence, a variety of resources were used by these people and, by inference, Sandy Lake ware makers in the Eastern Woodlands.

Sandy Lake sites in northwestern Ontario and southeastern Manitoba have faunal assemblages reflecting some of the diversity of animals found in the Boreal Forest. A list from the Spruce Point site included moose, beaver, woodland cariboo, black bear (*Ursus americanus*), muskrat (*Ondatra zibethicus*), otter (*Lutra canadensis*), fisher (*Martes pennanti*), fish, birds, and turtles (Rajnovich 1983:80). Boreal Forest dwellers relied on fishing to a large degree (Meyer 1998), with Sturgeon (*Acipenser fulvescens*) fishing being an important summer activity, as indicated by the activities of the postcontact

<b>Table 3.2. Different site types occupied by the 19th century Eastern Dakota and their seasonal uses (from Spector 1985:190).</b>												
<b>Site Type</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>
Winter encampment	X----	X----	X-									
Muskrat procurement			X	X	X				X			
Maple sugar camp			X----	X-								
Summer logistical & residential					X	X----	X---	X----	X-			
Wild ricing camps								X----	X-			
Cranberry camps									X			
Deer base camp	X								X	X	X	
Deer cache site	X								X	X	X	
Deer kill site	X								X	X	X	
Ephemeral camps	intermittent occupation; not seasonal											
Burial sites	not seasonal											
X---X---X-	continuous occupation (longer time)											
X X X	intermittent occupation (shorter time)											

Ojibwa (Quimby 1960:123). Along with a reliance on wild rice in this region, Native people in the harvesting zones evidently fished (Ens 1998a), hunted forest animals and birds, as well as collected other plant foods (Yarnell 1964). This type of mixed economy is evident at the precontact Falcon Lake site (Trottier 1973) in southeastern Manitoba, where the remains of a diversity of animal, bird, and fish species were recovered near a wild rice harvesting location. Dore (1969:64) suggested that wild rice also attracted moose, muskrat, some fish, and ducks, which would then provide additional food sources for Natives. Snortland-Coles (1979:90) noted the high numbers of edible plant items in marshy locations such as those where wild rice grows. Nicholson (1996:71) commented that Boreal Forest groups also utilized migratory waterfowl, aquatic rodents and, in the winter, snowshoe hare. The second latest occupation (containing Selkirk and SLW) of the Long Sault site along the Rainy River had bison remains, with that being one of the most easterly occurrences of this mammal (Arthurs 1986:220). None of the other components at this site had bison. Thus, while people were in the wild rice harvesting regions, an abundance of other subsistence strategies were available, such as: hunting aquatic and terrestrial mammals, fishing, and catching migratory waterfowl (Spector 1985).

Sites closer to the Northeastern Plains subarea, such as the Mooney site in the Red River Valley (Johnson 1995; Michlovic 1987) tend to have a majority of bison faunal remains, although elk (*Cervus canadensis*), mule deer (*Odocoileus hemionus*), and pronghorn (*Antilocapra americana*) would also have been available (Shay 1985:31). This site contains SLW and is probably a seasonal bison hunting camp (Michlovic 1987). Peterson (1986) suggested that people who made SLW along the Red River Valley probably relied mainly upon bison, a typical Northeastern Plains economy, since it has been thought to be one of the most productive resources in this region. Due to the excellent recovery methods employed at large projects along the upper James River in North Dakota (e.g. Haury 1994), faunal remains provided much information to indicate

what the inhabitants were eating. At Northeastern Plains Villages such as these, the faunal remains usually consist of the following classes: amphibians, birds, mammals, fish, and reptiles (Haury 1994:10.10). As is typical of most Northeastern Grasslands sites, large ungulates are the most numerous identified specimen, with canids (*Canis sp.*), red fox (*Vulpes vulpes*), rodents, mustellids (*Mustellidae*), leporidae (*Lepus or Sylvilagus sp.*), and other medium sized mammals also being recovered. Evidence from the Shea site, along the James River, suggests that its inhabitants subsisted by mixed horticulture, hunting, and gathering (Michlovic and Schneider 1993). The inhabitants of more northwesterly sites containing SLW relied particularly on bison supplemented by other mammals, migratory waterfowl, and gathered plants (e.g. Nicholson 1990; Taylor 1994a).

Gregg (1994:88-89) stated that “there was no indication until recently that the Sandy Lake complex was ever anything but Woodland.” An association of SLW with Plains (e.g. Nicholson 1990) and Northeastern Plains Village (Michlovic and Swenson 1998) sites was a fairly recent finding. In other words, most researchers believed that SLW was found in sites which represented Woodland subsistence activities such as fishing, wild rice gathering, and hunting forest fauna. Instead, many of these Plains Village sites (which had large, detailed excavation projects) suggested a major presence of the people who made SLW (e.g. Gregg 1994; Michlovic and Schneider 1993). These findings may be explained by Johnson’s (1985:162) ideas that Sandy Lake people used a Woodland-Grassland edge adaptation which was an old pattern from at least the beginning of the late precontact time period. Peterson (1986:173) agreed that these people were involved in extensive utilization of resources from multiple environments during the year. This adaptation included bison hunting, fishing, wild rice harvesting, hunting of Woodland mammals, and gathering activities in both zones (Gibbon 1994:147). Johnson et al. (1977:29) suggested that some sites around Lake Winnibigoshish, Minnesota, where there is not or never has been wild rice, were possibly winter camps, spring fishing, or other specialized activity areas. The people represented

by the archaeological culture known as *Psinomani* may also have engaged in fire ecology in order to maintain levels of game (Johnson 1985:162). It is apparent that the people who made SLW utilized similar resources in Manitoba such as wild rice harvesting in southeastern Manitoba (e.g. Trottier 1973) and bison hunting in the southwestern part of the province (e.g. Hartlen 1996a; Nicholson and Hamilton 1997). From the faunal remains found in SLW sites and the proposed resources available during the time that they were occupied, a general outline of how these people lived has emerged. To summarize, they apparently used a wide variety of food sources in many regions.

**3.5.1 Wild Rice Harvesting.** A discussion of the *Psinomani* culture would be incomplete without addressing the importance of wild rice (*Zizania aquatica* or *palustris*) to these people. Most researchers agree that the importance to precontact populations, particularly those who made SLW, of this nutritious, storable cereal cannot be overemphasized (e.g. Gibbon and Caine 1980). While focussing on cultural implications, this section attempts to synthesize various aspects of wild rice such as: the harvesting process, archaeological, physical anthropological, and ethnohistorical evidence of its usage by Natives, particularly the *Psinomani* culture, in what is now central North America.

Wild rice has been harvested in northern Minnesota and Michigan, northwestern Wisconsin and Ontario as well as southeastern Manitoba at least since early contact times (Figure 3.1). Peterson (1986:25) reported that a number of rivers flowing into the Red River were known to have large stands of wild rice, although this is not the case anymore. Devils Lake in North Dakota was known to have wild rice growing along the southeastern edge and SLW has been found at the Horner-Kane site there (Gregg 1994:4.4). Circumstantial evidence suggests that wild rice was also important to precontact Native populations in this region. This plant occurs elsewhere in North America but the most evidence of cultural usage occurs in the Eastern Woodlands. It is not really a true rice but a native aquatic cereal grain. Wild rice provided precontact peoples with a storable carbohydrate rich food source in considerable quantity.

Wild rice is harvested in several steps with the goal being to procure matured seeds from the plant. Sometimes feasts were held by the Eastern Dakota, before the harvest took place, to honor the 'water chief' (Spector 1985:177). The harvesting and processing steps used by the Bungi or Plains-Ojibwa were explained by Howard (1977:32) and provided the basic outline of traditional methods:

Wild rice was commonly harvested by a man and wife team in a canoe. The man stood erect at the stern and poled the vessel while his companion sat amidships, drawing armfulls of the standing grain toward her and beating the heads onto a hide placed in the bottom of the canoe. To gather in and beat the heads she employed two short sticks a little over a foot long, which tapered from handle to tip.

The rice was then dried in kettles over a slow fire, stirred constantly with a long stick. After it was thoroughly parched, it was placed in shallow pits, lined with skins, and men wearing new moccasins, danced upon it to remove the hulls. Finally, it was winnowed by tossing it into the air from birchbark trays, and stored for future use.

Quimby (1960:143) described a similar method of harvesting used by the Menomini in Wisconsin. Shortly before the plants were fully ripe, they would be tied into stalks and it was usually the older tribal members who were entrusted to harvest the wild rice (Aiken *et al.* 1988:81). Densmore (1970:128) stated that by tying these stalks together, it identified a group of relatives' portion of the wild rice stand and allowed room for the canoes. The long sticks were used to bend the high plant into the canoe and then tap the seeds off. Wild rice would be gathered two or three times during a two to five week period (Aiken *et al.* 1988:82). As the canoe was filled, it would be emptied into a ditch dug by the water's edge (Aiken *et al.* 1988:81). Native people may have spread the kernels out on mats (Johnson 1969a:31), bark, skins, or a flat rock to dry (Aiken *et al.* 1988:82) if not dried in some type of vessel. Precontact Natives probably used pottery vessels, rather than metal kettles, to dry and eventually cook wild rice. Evidence for this supposition is suggested by the finding of pottery sherds in what are interpreted as ricing jigs (Birk 1979; Bleed 1969; Gibbon 1976; Johnson 1978) and Birk's (1977) reference to SLW sherds having rice kernel impressions on them. These depressions were called jigs, as people would



dance or 'jig' in them to separate the hulls from the kernels (M.C.H.C. 1989). Quimby (1960:143) noted that the dried grain was beaten in special bags to separate the seeds. The winnowing process cleans out the unwanted plant matter by allowing wind to blow away the lighter chaff, while the heavier grains fell to the ground. Thus, although this process required many steps, it provided an easily storable food source.

It was important to properly store wild rice once it was harvested and processed as this would have served as a winter staple. The Ojibwa used birch bark bags called *makuks* to pack dried wild rice, fish, and other storables (Ens 1998a:96; Vennum 1988). Eastern Dakota people used storage pits for holding wild rice (Spector 1985:178). Densmore (1970:40) described storage pits which may have been used by the Ojibwa for this plant, explaining that they were six feet deep and lined with successive layers of hay, bark, wood, or earth. Thus, much effort was expended to ensure that the wild rice would be usable in winter. Batura (1981:20) also suggested that knowledge of storage techniques would have enabled larger population densities than previously possible.

Typically, wild rice is harvested in late August or early September (Johnson 1969a). Hence, "a large number of small archaeological sites used for a narrow range of activities should be present in the Mille Lacs area of Minnesota, for the area's prehistoric inhabitants were hunters-and-gatherers, and in the late prehistoric period, harvesters of wild rice" (Gibbon 1976:2). Buchner and Callaghan (1980:92) noted that the densest cluster of petroform sites in Manitoba coincided with where wild rice has the most favourable growing conditions; these areas are located along the Whiteshell and Rennie River systems. They (Buchner and Callaghan 1980:92) suggested that these petroforms may have been constructed in the late summer or early fall by people exploiting this seasonally available food source. While wild rice harvesting is seasonal, the resulting gathering could be preserved as a dependable winter food source and it would be accessible during times of dietary stress.

**3.5.1.1 Archaeological Evidence and Initial Usage.** There are three kinds of archaeological evidence associated with wild rice or its harvesting including: 1) sites associated with modern stands, 2) features associated with ricing, and 3) actual preserved rice grains. Johnson (1969a:31) described two kinds of precontact sites associated with wild rice: permanent villages, and specialized harvesting and processing locations. Some sites, where wild rice has been found, may have been overnight stops on the way to and from ricing fields.

Archaeologists typically infer that residents of a particular archaeological site, which is located near modern wild rice stands, would have used this subsistence economy (Cooper and Johnson 1964; Rajnovich 1984). Although this assumption is likely, the site may have been occupied during a season when wild rice was not available. Also, modern stands may not be located in the same places as those which grew thousands of years ago. La Vérendrye noted that the 1733 wild rice crop failed due to heavy rains (Ens 1998a:106; Burpee 1968:141; Rajnovich 1984:198) and this may have also happened in the past. Thus, although an archaeological site may be located near a modern wild rice stand, this does not necessarily mean that its inhabitants were using this plant.

Rajnovich (1984:197), when working for the Northwestern Ontario Heritage Branch, was asked by the Grand Council of local Ojibwa bands near the Lake of the Woods, Ontario region to attempt to provide information about how long Natives had been collecting wild rice there. Her study was implemented because Ojibwa bands were opposed to the issuing of harvesting licenses to all Ontario citizens due to a long standing tradition of Native gathering (Rajnovich 1984:197). She readily admitted that there was no direct precontact evidence (Rajnovich 1984:197). However, archaeological surveys of the region did not include the time consuming flotation method. Large scale excavations, where flotation was carried out, failed to yield wild rice samples (Rajnovich 1984:198). Rajnovich (1984:197) concluded that although no precontact wild rice evidence has been found in the Lake of the Woods region, it was not necessarily due to the plant not being

utilized there. Instead, it may not have been recovered because of the nature of the archaeological record (Rajnovich 1984:197). She then looked at the locations of modern stands in relation to Laurel, Blackduck, and southern Selkirk sites (Rajnovich 1984). It is suggested that SLW was not as readily recognized in northwestern Ontario when this study took place, since sites with this pottery would be an obvious choice to look at for the proximity to wild rice (see the discussion of this ware). Rajnovich's (1984) results indicated that 100 per cent of the sites were within 6 km of a rice stand, with the majority being less than 1 km away. Her study concluded that 61 per cent of Middle Woodland and 51 per cent of Late Woodland components were within 1 km of a modern stand in the Lake of the Woods region. In fact, many of these sites were also within 500 m of a wild rice harvesting location, with 46 per cent of Middle Woodland and 40 per cent Late Woodland components (Rajnovich 1984:209). These results help to reinforce the often cited idea that site proximity to modern wild rice stands may be valid evidence for precontact usage of this plant.

A second type of archaeological evidence for wild rice harvesting comes from "paraphernalia [which] includes hearths, threshing pits and high concentrations of pottery sherds reflecting fragile vessels and small areas of camps" (Chapman 1989:132). Although hearths may preserve grains of rice (Zoltai 1989a:79), and threshing pits may be visible as a preserved feature (Gibbon 1976), concentrations of pottery will not necessarily reflect wild rice harvesting. For example, many sites have concentrations of 'fragile' pottery that are associated with processed bison bones (e.g. Taylor 1997) or maize (Gibbon 1994). Researchers in Minnesota and Wisconsin have found many features which are interpreted as ricing jigs or pits (Birk 1977a; Bleed 1969; Gibbon 1976; Johnson 1969a, 1978; Valppu 1989). These are basin-shaped pits which are often lined with a layer of clay (Figure 3.2). Ricing jigs were likely places where wild rice hulls were removed, which is an essential process in readying it for consumption. McNally (1990:98) reported wild rice milling depressions in bedrock near Jadel Lake on the

southern Manitoba-Ontario border. Pufahl (1990:16) noted the discovery of a rice harvesting site near Kenora, Ontario, although no explanation was given to why it was classified as such.

Unfortunately, there is little evidence of wild rice grains preserved in archaeological sites (Ens 1998a; Zoltai 1989a). Part of the problem is that wild rice grains are fairly small, and when they are found, few are usually preserved (Gibbon 1976; Rajnovich 1984). Archaeologists must use flotation techniques more often in order to find proof of wild rice usage in the precontact period. However, some evidence of this plant has been found in the archaeological record. Fragments of wild rice have been recovered from the following sites: Wanipigow in southeastern Manitoba (Zoltai 1989a); Dunn Farm in Michigan (Ford and Brose 1975:9); Brogley Rockshelter in Wisconsin (Tiffany 1974); Cooper and Wilford sites near Mille Lacs Lake in Minnesota (Johnson 1985:159); Petaga Point (Bleed 1969:7) and Big Rice in Minnesota (Reid and Rajnovich 1991:220; Valppu 1989:1); and tentatively Old Shakopee Bridge in Minnesota (Gibbon 1976:8, 22). Dunn Farm and Brogley Rockshelter are the only two sites which do not contain SLW. Although the three kinds of archaeological data for wild rice usage is scanty, there is some evidence that the plant was being harvested by precontact populations; however, it is not known exactly when this activity began.

It is suggested that the people represented by the material remains of the *Psinomani* culture were probably the most intensive users of this plant during late precontact times (Lofstrom 1987:10). This idea is suggested by site locations, more ricing jig features and archaeological grains, as well as sherds having wild rice impressions (Birk 1977a:30). There is less evidence that contemporary Selkirk peoples or older Brainerd, Laurel, St. Croix, Blackduck, and Kathio populations harvested wild rice. For example, the Big Rice site had 37 probable ricing features of which only seven were associated with the stratigraphically lower Laurel artifacts (Valppu 1989:12); many others were probably utilized by the makers of SLW. Lofstrom (1987:10) noted that

small ricing sites around Upper Pine River, Cass county, Minnesota are nearly devoid of Brainerd and St. Croix pottery; there are a few Blackduck sherds but there is an abundance of SLW. Thus, initially, smaller populations probably had their choice of the best wild rice beds but as populations increased (Johnson et al. 1977:28) people had to leave and look for marginal stands such as the Upper Pine River region (Lofstrom 1987:10). This suggestion may conflict with ethnographic accounts of people owning particular stands (Densmore 1970:128).

MacNeish (1958:68) and Rajnovich (1984:197) noted that some southern Selkirk composite (A.D. 1100-postcontact; Meyer and Russell 1987:27) populations may also have utilized wild rice. Six fragmented wild rice grains were recovered from the Selkirk (probably SLW) component in one soil sample from the Wanipigow site; another 79 whole or fragmentary grains were identified from another sample associated with Blackduck or 'Selkirk' artifacts (Zoltai 1989a:77, 93). Unfortunately, some of this pottery was originally misidentified as Selkirk instead of SLW. While there is little physical evidence to verify that the former utilized wild rice, a coincidence of some sites with this pottery and modern rice stands does exist (Rajnovich 1984). Since Selkirk and Sandy Lake people occupied some of the same areas, contemporaneously, it is likely that they both utilized wild rice. As most archaeologists agree that the Cree are the postcontact descendants of the people who produced Selkirk pottery (MacNeish 1958:82; Meyer and Russell 1987) and since the Cree harvested wild rice where available (Ray 1974:35), their ancestors probably also did. Presumably, other archaeological entities in the Rainy River composite would also be related. In the wild rice harvesting location near DgKl-14 (Pastershank 1989:13) in northwestern Ontario, a SLW/Selkirk rim was found, further indicating the connections between Selkirk, SLW, and wild rice harvesting.

Researchers have concluded that wild rice harvesting was well established by the time manufacturers of SLW inhabited parts of northern Minnesota, western Wisconsin, northwestern Ontario, and southeastern Manitoba (Arthurs 1978; Birk 1977a; Peterson

1986; Trotter 1973). The idea of SLW being associated with wild rice harvesting is not new. For example, Cooper and Johnson (1964:475) noted that this plant still grew in thick stands in Mud Lake, near the Scott site, which is one of the four used to define this ware. Their reasoning for the association between SLW and wild rice is largely due to the presence of these sites near modern stands of this plant, although direct evidence does exist. Perhaps the best correlation between SLW and wild rice usage is provided by Birk (1977a:30) who stated that "it is not uncommon to be able to distinguish individual wild rice grain or hull impressions on certain SLW potsherds." This statement leaves little doubt that the makers of SLW harvested *Zizania* species. Burnt and unburnt archaeological rice fragments were recovered at the Wanipigow Lake site (Ens 1998a:42, 174; Zoltai 1989a) where SLW has been identified in southeastern Manitoba. However, Laurel, Blackduck, and southern Selkirk pottery was also found at this site. Although flotation derived paleobotanical samples were lost from the Old Shakopee Bridge site in Minnesota, a wild rice grain and SLW sherds were observed in a refuse pit during the excavations (Gibbon 1976:8). He suggested that this grain was associated with SLW and the 'ricing jigs' (Gibbon 1976). This further indicates the association of SLW with wild rice harvesting and processing. Bleed (1969:6) found ricing pits apparently used for storage, jiggling pits used for threshing, and a rice parching 'ring' at the Petaga Point site in eastern Minnesota. The latter feature was probably postcontact in age but the other features probably date to the Late Woodland period (Blead 1969:6, 8). At the Martin-Bird site in northwestern Ontario, Dawson (1987:52) noted six depressions which he suggested may have been wild rice storage pits as evident from other sites on Whitefish Lake. No diagnostics were found in the pits but a Sandy Lake Corded vessel and a Blackduck burial pit were found nearby.

Johnson (1985) proposed the protocontact Bradbury phase (Birk 1992:8; Birk and Johnson 1992) to explain the activities of the Eastern Dakota, or Mdewakanton, at the time of French contact. The subsistence economy of this phase involved a dependence on

large animals (mainly bison) and wild rice (Birk and Johnson 1992:209). These sites are characterized by the association of French trade goods and Late Woodland artifacts such as SLW, Ogechie, and Orr pottery, in the Mille Lacs Lake region of east-central Minnesota (Birk and Johnson 1992:209). Many of the Bradbury phase sites contain wild rice threshing pits (Birk and Johnson 1992:210). One Ogechie series vessel in Cooper Mound One had wild rice grains inside it (Birk and Johnson 1992:227). Johnson (1985:148) stated that all sources agree about a Dakota reliance on wild rice, and in 1679, after Father Louis Hennepin's capture by the Dakota, he recorded that they subsisted on fish and stored rice. Another aspect of the Bradbury phase is that wild rice became a substitute for maize (used by Oneota groups) once the techniques of parching and preserving were discovered (Johnson 1969, 1985:161), as discussed previously.

Ojibwa people were still using wild rice processing sites during the 1900s, in much the same manner as is inferred for precontact times (Johnson 1969a:31). Saylor (1989) noted that the Wanipigow site locality had long been used as a ricing campsite, both before and after European contact. Trottier (1973:64) made this observation while working at the Falcon Lake site in southeastern Manitoba:

In conversation with the local residents[,] mention was made that the native people from the Indian reserve near Shoal Lake (Indian Reserve No. 40) used the site up to 1947 as an overnight campsite in the fall on their way to and from the northward lying wild rice fields, such as Rice and Mallard Lakes. Perhaps this form of occupation occurred in prehistoric times as well.

Given that SLW has been identified at this site, and this ware is often associated with ricing sites, it seems logical to agree that precontact harvesting occurred near this site. Some Native people, on and off reservations in Minnesota, still harvest this plant on an annual basis. Modern harvests and sales of this product take place every year (Keane 1997), having changed from a subsistence to a cash crop (Johnson 1969a:31). Minnesota has brought about harvesting regulations, so that the amount taken is not enough to

deplete the source. Thus, some people still subsist on wild rice and possibly even earn a living from its harvesting.

**3.5.1.2 Trade.** Since SLW is often found in small amounts as compared to other pottery wares in a particular site, the author suggests that these vessels may have been traded, with or without wild rice inside. Obviously a skin or bark container would be lighter to transport but the quality of SLW may have added to its value. Inter-marriage could also explain the small numbers of these vessels in most sites. Ens (1998a:103, 104) noted that, in postcontact times, wild rice was traded as a country provision at Portage de l'Isle, Winnipeg Lake, Lac du Bonnet, and Fort Alexander posts at the end of the 16th and beginning of the 17th centuries. Alexander Henry the Elder stated that his 1775 journey to the Saskatchewan River would not have been possible without the supply of wild rice obtained at Lake of the Woods (M.C.H.C. 1989:4). Quimby (1960:148) noted that wild rice was sometimes sold to fur traders between 1760 until about 1820, further indicating its value as a tradable commodity. Even though wild rice was not as important to the Plains-Ojibwa "as to their Woodland kinsmen in Ontario and Minnesota" (Howard 1977:32) they also harvested and traded this commodity. Thus, while wild rice may have been exchanged in late precontact times, particularly by the makers of SLW, it was definitely an important trade commodity during the Fur Trade period.

### **3.6 Settlement Patterns**

In Minnesota and northern Ontario, settlement patterns are poorly documented because of artifact mixing in shallow sites (Gibbon 1976, 1994; Reid 1988). Gregg (1994:89) concluded that "it now appears that late prehistoric people with Sandy Lake material culture had territories that extended from the woodland ecotone and into the Northeastern Plains. . . . Some of these people may have depended upon gardening to such an extent that they were living what we would identify as a Plains Village lifeway." Two examples of year round Woodland villages or hamlets, which have SLW, are the



Cooper and Wilford sites near Mille Lacs Lake in central Minnesota (Birk and Johnson 1992:208; Gibbon 1994:147). Similarly, the Shea site in North Dakota is a fortified village where mainly SLW was found (Michlovic and Schneider 1988, 1993). Oneota vessels were also found there, which further supports the idea of it being a village, since many Oneota sites in southern Minnesota and adjacent Iowa are villages (Gibbon 1994; Penman and Sullivan 1995). Gregg (1994:89) also acknowledged that the Plains Village lifeway may have been taken into parts of southern Manitoba by a migration (e.g. Nicholson 1991, 1994), which may explain why some sites from this province have Plains Village and SLW vessels (e.g. Hartlen 1996a, 1996b, 1997; Pankratz 1996; Taylor 1994a). Thus, these groups of people may have migrated into the province together, or they may have occupied the sites together.

Extensive garden beds were found in the woods near the Fickle site, in northwestern Wisconsin, and these were suggested to be related to the Aboriginal occupation of the site (Cooper and Johnson 1964:474; Kolb 1988:63-65). Although there was no archaeological evidence for corn or any other cultigen being grown during the precontact period in this region, 26 other habitation 'villages' are reported to have garden beds in the same county as the Fickle site and surrounding ones (Kolb 1988:63-65). Unfortunately, more information about these gardens is needed (Kolb 1988:65).

To summarize the subsistence evidence in SLW sites, it is apparent that to the east of the range, people were mainly utilizing wild rice and forest resources. In SLW sites to the west, bison were evidently the staple resource. Some sites in Minnesota (e.g. Birk and Johnson 1992), eastern North Dakota (e.g. Gregg 1994), and perhaps along the Rainy River (Arthurs 1986:224) also indicate that residents lived in at least semi-sedentary villages. Perhaps people manufacturing SLW functioned on a seasonal round, as suggested by so many archaeological researchers. Nicholson's (1996) explanation for Blackduck groups, also from the Eastern Woodland, moving westward seems to be quite plausible for SLW groups.

**3.6.2 Burials.** Although there is little evidence available about the burial practices of the *Psinomani* culture, three types are known: intrusive mound interment; primary flexed interment with associated mortuary vessels in a shallow subsurface burial pit underneath a small circular conical mound; and nonmound interment (Birk 1977a:17; Lothson 1972; Gibbon 1994:146). Human burials associated with SLW occurred at the following Minnesota sites: Norway Lake (Birk 1977a:29), White Oak Point site (Lugenbeal 1982:5), Cotton Lake Island (Birk 1979:178), Osufsen (Cooper and Johnson 1964:474), Cooper Mound (Lothson 1972:218), and one possibility near Lake Bertha (Lofstrom 1987:10; Wilford et al. 1969:20). Birk (1977a:29) described the significance of the Norway Lake site: “considering the wide spatial and temporal parameters for Sandy Lake and the suggested high human population density for this period in the Mississippi Headwaters region (Johnson 1969[a]:35), it is likely that these three isolated mound burials represent some form of status interment rather than a common mortuary practice.” Although SLW is the most abundant pottery in the White Oak Point habitation site and Mound 4, the pottery from Mound 1 includes very few of these vessels (Lugenbeal 1982:12-14). The Cotton Lake Island site had two SLW vessels of which one was the check Stamped type (Birk 1979:178). At the Osufsen mound, two SLW vessels were recovered from apparently intrusive Blackduck mounds (Birk 1977a:22; Cooper and Johnson 1964:477-478). Vessel #1 from the River Mouth site in eastern Manitoba was found a few metres away from an exposed burial of human remains (see Section 5.3.5). It is unclear if this vessel was associated with the burial or not (Gord Hill, personal communication, 1997).

One mound containing SLW has been found in eastern North Dakota. Mound B, of the Jamestown Mounds, contained two intrusive pits with three adult bundle burials (Snortland 1994). Furthermore, Snortland (1994:66) explained: “In one of these graves, a bundle burial was laid on the bottom beside a Sandy Lake mortuary vessel and was covered with an ocher-coated limestone slab and two granitic rocks. . . .The upper surface

of the slab was used as a platform for another bundle burial. . . . Radiocarbon dates indicate death occurred about A.D. 890-1260.” Naturally, this finding suggests that the SLW vessel was placed there before this date range. If the radiocarbon testing results are reliable, then this example is one of the earliest dated SLW vessels. It also indicates the westernmost burial associated with SLW, since the rest have been confined to Minnesota.

Although some researchers suggested that wild rice made a large enough population possible to allow the mass building of burial mounds (e.g. McAndrews 1969:1671), Lofstrom (1987:10) does not agree with this notion, citing the fact that there are very few Sandy Lake mounds. The former idea does not seem logical, as the *Psinomani* cultural group was probably the most intensive user of wild rice (Gibbon 1994:147) and should therefore have left behind many burial mounds. Lofstrom (1987:12, 13) suggested that Middle and transitional to Late Woodland mounds were the result of groups meeting in spring and summer gathering sites. He also proposed that after wild rice became so prominent in the subsistence economy of Natives in Minnesota, there may have been fewer reasons to aggregate seasonally, as access to alternate winter resources was not as necessary (Lofstrom 1987:13). Thus, the few SLW vessels found in mounds could be explained, as follows: “the lingering tradition of mound-building in *Wanikan* culture demanded an occasional intrusion into an existing mound, or the construction of a meager replica, but the latent function and underlying meaning of mound-building had been lost” (Lofstrom 1987:13). This interesting perspective may indeed explain why there are few mounds with *Psinomani* material remains. However, there are other reasons for seasonal or annual aggregation, such as to trade, socialize, uphold familial ties or traditions (Meyer and Thistle 1995:406). Meyer et al. (1992) described one of many aggregation sites in east central Saskatchewan, which were likely visited for thousands of years, so there is evidence of lengthy perpetuity. Thus, Sandy Lake people probably did not discontinue aggregating seasonally or annually. An alternative theory for the lack of SLW vessels found in mound burials is that the people

represented by the *Psinomani* culture changed their mode of burial, since the population may have been much higher than in previous times. Dakota people, who are believed to be among the descendants of those who made SLW, practiced communal secondary interment after some time of exposure on a scaffold (Ossenberg 1974:20).

### 3.7 Dating

Most archaeologists agree, using the available data (Table 3.3; Figure 3.4), that dates for SLW range from about A.D. 1000 to 1750 (Birk 1979:175). Contemporary information differs little from this date range, with the exception that SLW may have been manufactured slightly earlier, at perhaps A.D. 950 (accounting for the Mooney and Jamestown Mound results). It is generally agreed that the first appearance of *Psinomani* was at about A.D. 1000-1100 (Birk 1979:175; Gibbon 1994:146). However, there is a general lack of radiocarbon dates from Sandy Lake components (Johnson 1995:81) and a few dates have been published incorrectly (as discussed below).

There is general agreement that SLW replaced the Blackduck horizon in Minnesota (Cooper and Johnson 1964:478-479; Lugenbeal 1976:630, 632). In 1979, Birk proposed that this occurred in the northern Minnesota region by about A.D. 1100-1200. Similarly, Johnson (1979:29) suggested that in about A.D. 1300-1400 SLW also replaced the Kathio phase. Peterson (1986:16) stated that these two wares are not usually found together in Minnesota, and that SLW postdates it. One possible contradiction to this idea was found at the Morty site, in Wisconsin, where a broken Blackduck vessel was found on top of a SLW midden, suggesting that the Blackduck pot was later (Salzer 1980:146 in Peterson 1986:16). However, a thermoluminescence date of "A.D. 1695±53 years (Alpha-860)" was obtained from a SLW rim at this site, while one of the Blackduck sherds was thermoluminescence dated at A.D. 900±210 years (Alpha-861) (Peterson 1986:17). This finding indicated that mixing of components occurred at the Morty site and confirmed the current idea that SLW occurs later than Blackduck in

Table 3.3. Sites containing Sandy Lake ware and associated dates.

SITE NAME	SITE #	AREA	REPORTED DATES (B.P. Unless Specified)	SOURCE OF INFORMATION/DATES
<b>WISCONSIN</b>				
Morty	47AS47	Ashland county; NW	A.D. 1695±53 (Alpha 860) 1685±43 IN JUSTIN AND SCHUSTER 83	Peterson 1986:17; Salzer 1986
<b>ONTARIO</b>				
Lady Rapids	DcKc-1		470±250 (DIC 1720)	Callaghan 1982:28; Reid 1984:39
	DjKa-5	Lake of the Woods	A.D. 1230±125 (No # given)	Reid in Rajnovich and Reid (1978:48)
Ash Rapids West	DjKq-5	Lake of the Woods	720±125 (DIC 569)	Reid 1984:39
Ballynacree	DkKp-8	Source of the Winnipeg River	300±70 (DIC 760)	Reid 1984:39
			A.D. 1660±95	Johnson 1995:93
Long Sault	DdKm-1	Rainy River	200±100 (DIC 761)	Arthurs 1978:59
Ash Rapids East	DjKq-4	Ash Rapids, Lake of the Woods	A.D. 1690±225 (DIC 765)	Reid and Rajnovich 1980:70, 72-73
Meek	DjKp-3	West-central Lake of the Wood	A.D. 1350±55 (DIC 1719) (Selkirk) A.D. 1410±140 (DIC 763) (Selkirk)	Reid and Rajnovich 1980:70, 72; Reid 1984:39
<b>MINNESOTA</b>				
Crosier Cemetery	21ML33	Mille Lacs county	A.D. 1410±110 (Beta 35179)	Mather 1991 in Justin and Schuster 1994:83
Mooney (TL)	21NR29	Red River Valley	A.D. 1140±? (Alpha-808A) shell A.D. 780±? (Alpha-808B) shell A.D. 1110±? (Alpha-808C) grit Avg.=940±100 B.P.	Michlovic 1987:45; Michlovic and Swenson 1998:21
Mooney Phase II C13 values Calibrated 2 σ dates	21NR29	Red River Valley	A.D. 910-1110 360±60 (Beta-79568/CAMS-18177) A.D. 1444-1649 (1511, 1600, 1616) 470±70 (Beta-79569/CAMS-18178) A.D. 1390-1530 (1438) 470±80 (Beta-79562/CAMS-18171) A.D. 1385-1637 (1438) 480±60 (Beta-79563/CAMS-18172) A.D. 1388-1522 (1436) Avg. date=A.D. 1419-1511 (1446) 640±50 (Beta-79564/CAMS-18173) A.D. 1288-1405 (1307, 1360, 1379) 720±50 (Beta-79565/CAMS-18174) A.D. 1225-1323 (1288) Avg. date=A.D. 1334-1395 (1298)	Johnson 1995:84-85
Scott	21CA1	Near Mud Lake dam, Deer R.	A.D. 785±120 (I-790) A.D. 798±120 (I-790)	Johnson 1969:34; Lass 1980:31; Lugenbeal 1976:775 Cooper and Johnson 1964:478
Basswood Shores	21DL90	Mud Lake	200±90 (Beta 51692)	Justin and Schuster 1994:82
<b>NORTH DAKOTA</b>				
Shea	32CS101	Upper James R.	390±70 (Beta 13304) 380±50 (Beta 23223) 510±50 (Beta 23224) 480±80 (Beta 23225) 380±80 (Beta 23226) 350±70 (Beta 40620) Avg.=421.8±25.6	Michlovic and Schneider 1993:124; Michlovic and Swenson 1998:21
Calibrated 2 σ dates			A.D. 1414 (1478) 1657 A.D. 1435 (1483) 1648 A.D. 1320 (1426) 1467 A.D. 1307 (1436) 1635 A.D. 1410 (1483) 1952 A.D. 1433 (1516, 1591, 1621) 1953 (bomb infl.) Weighted Avg.=A.D. 1503-1555	
Horner-Kane	32RY77	Ramsay county; Devils L.	250±40 (UCR-2667) 290±40 (UCR-2668)	Gregg 1994:4.24; Michlovic and Swenson 1998:21
Calibrated 2 σ dates			A.D. 1525 (1657) 1954 (bomb infl.) A.D. 1486 (1644) 1953 (bomb infl.)	

Jamestown Mound	32SN22	Component III of Mound B	A.D. 960±210	Weighted Avg.=A.D. 1651-1708	
Quast	32LM234	Upper James River	705±70 (UGA-1097)	A.D. 1219 (1291) 1404	Snortland-Coles 1985:5.13-16
Gohner I (TL)	32SN215	Upper James River	480±40 (Alpha-2333)	A.D. 1430-1510	Michlovic and Swenson 1998:21; Schneider 1982:121
			700±60 (Alpha-2334)	A.D. 1190-1310	Michlovic and Swenson 1998:21; Gregg et al. 1986:84
				Avg.=	
Kirschenmann III	32SN247		none?		Schneider 1982:116
Naze (TL)	32SN246	Upper James River valley		A.D. 590-1190 (Alpha 2883)?	Gregg 19??; Swenson and Gregg 1988:10
<b>Calibrated 2 <math>\sigma</math> dates</b>				A.D. 920-1160 (Alpha 2883)	
				A.D. 870-1430 (Alpha 2884)	
				A.D. 1180-1420 (Alpha 2884)	
				A.D. 880-1440 (Alpha 2885)	
				A.D. 1190-1430 (Alpha 2885)	
Hendrickson III	32SN403	Stutsman county; James R.	524±65 (UGA-1396)	A.D. 1304 (1418) 1477	Schneider 1982:123; Michlovic and Swenson 1998:21
<b>Calibrated 2 <math>\sigma</math> dates</b>				A.D. 1291 (1399) 1440	Swenson and Gregg 1988:10
			585±60 (UGA-1397)	A.D. 1283 (1403) 1473	Swenson and Gregg 1988:10
			570±85 (UGA-1498)	Weighted Avg.=A.D. 1351-1430	Swenson and Gregg 1988:10
<b>MANITOBA</b>					
Lockport	EaLf-1	East bank of Red R.	Buchner 1976		MacNeish 1958:??; Flynn 1993:??
Wanipigow Lake	EgKx-1	Wanipigow Lake, SE			Arthurs 1978:61; Rajnovich 1987:61 (in Stan Saylor pers. comm)
Lowton	DiLv-3		510±110 (S-3459)		Nicholson and Malainey 1995:87; Reid 1972
Lovstrom	DjLx-1	Jock's Creek, Souris R., SW	405±110 (S-3032)	A.D. 1545±110	Nicholson 1994:201
			465±100 (S-3033)	A.D. 1485±100	
Duthie	DiMe-16	Makotchi D-D locale, SW	880±80 (Beta 62705)	A.D. 1070±80	Taylor 1994a:??
Bradshaw	DiMe-18	Makotchi D-D locale, SW	Date		Tsukamoto 1999:??
<b>RELATIVE DATES</b>					
<b>MINNESOTA</b>					
Pimushc	21 BL ?	Beltrami county	circa A.D. 1650		Scott Anfinson, pers. comm. 1995 in Johnson 1995:93
Field Site #4	21 CA 12	Upper Pine River, Cass county	Protocontact		Anfinson 1979:230; Birk 1979:181; Peterson 1986:17
Aquipaguctin Island	21 ML 2	Rum R., L. Onamia, ML-KSP	Protocontact		Birk and Johnson 1992:208; Johnson 1969; Wilford 1955:136
Vineland Bay*	21 ML 7	Outlet-Mille Lacs L., ML-KSP	Protocontact		Birk and Johnson 1992:208
Cooper Village*	21 ML 9	Rum R., L. Ogechie, ML-KSP	Protocontact		Birk and Johnson 1992:206; Johnson 1969; Lothson 1972
Cooper Mound*??	21 ML 10	Rum R., L. Ogechie, ML-KSP	Protocontact		Birk and Johnson 1992:206; Ready 1979:143
Petaga Point*	21 ML 11	Rum R., L. Ogechie, ML-KSP	Protocontact		Birk and Johnson 1992:206; Bleed 1969; Johnson 1969, 1978
Wilford	21 ML 12	Rum R., L. Ogechie, ML-KSP	Protocontact		Birk and Johnson 1992:208
Cooper Mound	21 ML 16	Rum R., L. Onamia, ML-KSP	1670-1760?		Birk and Johnson 1992:209; Lothson 1972:15
	21 WL 1	Wilkin county	A.D. 1200-1400		Michlovic 1985:135
<b>ONTARIO</b>					
Spruce Point	DjKq-1	Lake of the Woods	post 1600s (Beta 4149)		Rajnovich 1983
R.-River		L.-Lake			
TL-thermoluminescence dates		ML-KSP-Mille Lacs-Kathio State Park			
Cal-calibrated		bomb infl.-bomb influenced			

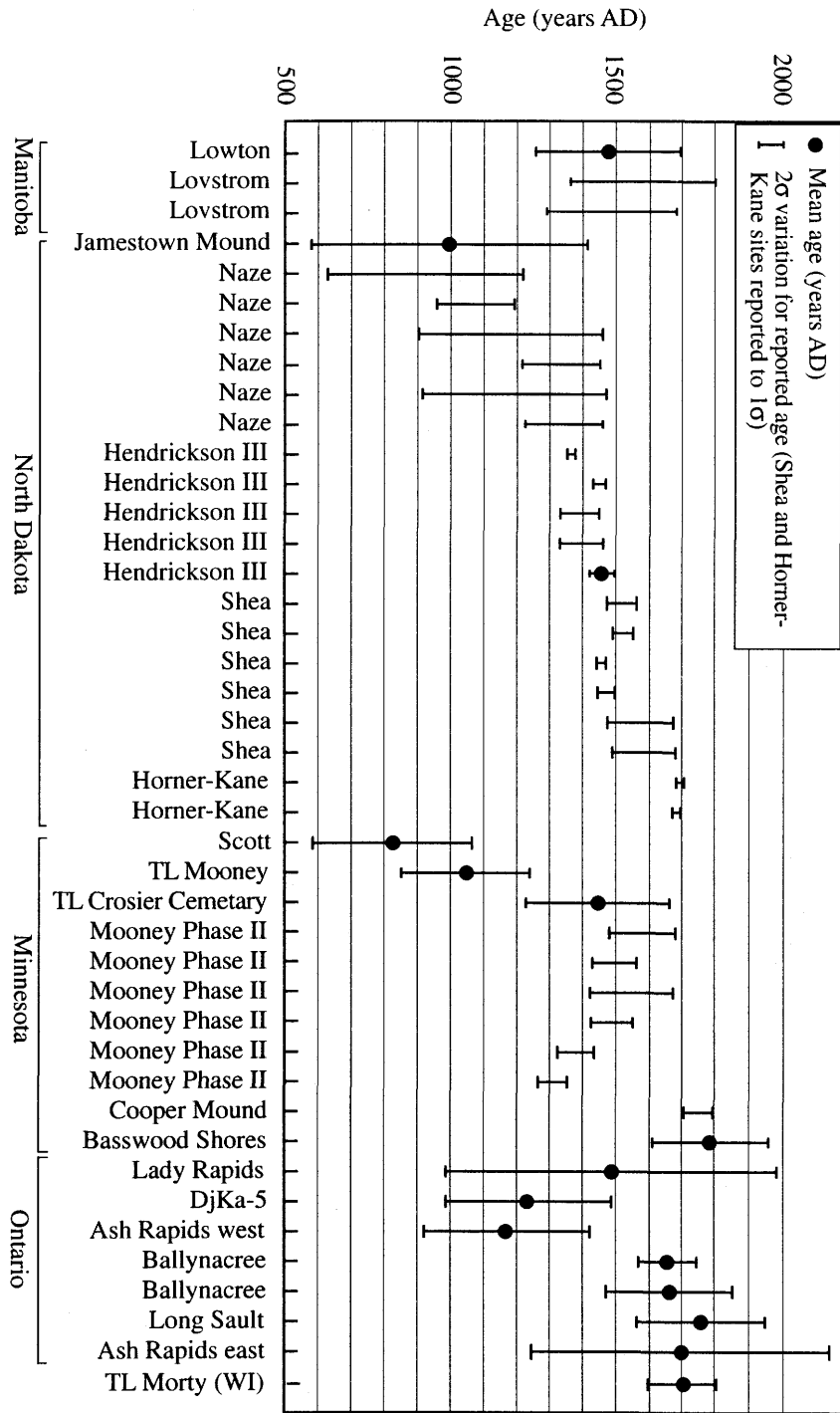


Figure 3.4. Published data for sites with dated components with Sandy Lake ware. Note, the date for the Scott site, although presented here, is likely associated with a Blackduck component. The prefix "TL" indicates a thermoluminescence age. Sources for this data are presented in Table 3.3.

Minnesota (Peterson 1986:17). Contemporary data (Gibbon 1994:146) indicates that at about A.D. 1000 SLW replaced Blackduck in central Minnesota.

In northwestern Ontario, Blackduck components generally are also earlier than Sandy Lake ones, when the stratigraphy can be deciphered (e.g. Arthurs 1986). Reid (1988) and Hamilton (1988) have discussed some of the problems inherent in Boreal Forest archaeology that may hinder detecting these differences in temporal units. Arthurs (1986:229) suggested that SLW appeared in the Rainy River region in late precontact times based on evidence from the Long Sault and the Lady Rapids sites (Callaghan 1982:28). Unfortunately, many sites from northwestern Ontario have problematic stratigraphy, which makes it difficult to discern stratigraphic changes that might be evident in the myriad of sites which have Blackduck, Selkirk, and SLW.

The earliest dates associated with SLW were obtained by the thermoluminescence method on pottery from the Mooney site in western Minnesota (Michlovic 1987). Three SLW sherds from this site were assessed at an average date of  $940 \pm 100$  B.P. (Alpha 808A-C) or a calendar date range of A.D. 910-1110 (Michlovic and Swenson 1998:21); one sherd was grit tempered and two were shell tempered (Michlovic 1987:45). This averaged date has been reported incorrectly, listed as A.D.  $940 \pm 100$  instead of B.P. (in Justin and Schuster 1994:82; Participants 1987:57). It is instead averaged to A.D. 1010 (Michlovic 1987:44). Since the thermoluminescence method is probably more accurate than  $^{14}\text{C}$ , with the actual pottery rather than associated bone being dated and there were more samples submitted, the Mooney site dates (Michlovic 1987:45) are likely close to the true beginnings of SLW. Another early  $^{14}\text{C}$  date, "A.D.  $960 \pm 210$ ", came from a sample recovered from an intrusive burial with one Sandy Lake corded vessel at Jamestown, North Dakota (Snortland-Coles 1985:5.16). This finding indicates contemporaneous occupations of the Woodland and Plains zones by peoples who made SLW (Peterson 1986:26). A similar vessel was reported by Schneider (1982:119-121)



from the Beeber site along the James River in North Dakota and he suggested that it dated between about A.D. 1000-1300 based on stratigraphic placement and other dated sites.

Although the Scott site in Minnesota is listed by a number of researchers as yielding an early SLW date (e.g. Participants 1987:57; Peterson 1986:15), it probably relates to the Blackduck component (Lass 1980:31). Cooper and Johnson (1964:478) noted that the charcoal sample was taken from a fire pit intruding into Level 4 from the level above and they indicated that Level 2 yielded more SLW than Blackduck, while the reverse was true for Levels 3 and 4. The Scott site contains SLW and produced an uncalibrated  $^{14}\text{C}$  date of "A.D. 785 $\pm$ 120 (I-790)" (Cooper and Johnson 1964:475); however, this date is probably more appropriate for the older Blackduck component at this site (Lass 1980:31). One may assume that the SLW component is later than A.D. 785 but this is not a new idea. Thus, the frequently quoted Scott site date is probably associated with the Blackduck rather than the *Psinomani* component.

Many calibrated dates from sites in eastern North Dakota have been published recently, including those from sites which have identified SLW. Many of these sites are included in the Northeastern Plains Village complex but SLW has often been found with artifacts of this complex (Michlovic and Swenson 1998). Thus, some of these sites are included in Table 3.3.

Several  $^{14}\text{C}$  dates, related to occupations with SLW, have been assessed in northwestern Ontario (Table 3.3). Reid (1984) discussed the Lady Rapids (Callaghan 1982), Long Sault (Arthurs 1986), and Ballynacree sites but the latter was only assessed as having SLW in Participants (1987). At the Lady Rapids site, one sample associated with Blackduck and SLW pottery yielded a date of 470 $\pm$ 250 B.P. (DIC 1720) (Callaghan 1982:28; Reid 1984:37). The large standard deviation results in a large range for a 95 per cent significance value. It was suggested that this part of the site might represent a contact situation between makers of SLW and Blackduck, intermarriage, or a brief occupation of a Blackduck site by those who made SLW (Reid 1984:37). One sample from the Long

Sault site, located along the Rainy River in northwestern Ontario, was obtained from a mainly Selkirk, partial SLW, component and yielded a date of  $200\pm 100$  B.P. (DIC 761 in Arthurs 1986:223; Reid 1984:39). After the MASCA (Museum Applied Science Center for Archaeology, University Museum, University of Pennsylvania) correction was applied, this date was reported as A.D. 1650 (Arthurs 1986:223). The Ballynacree site, listed as having a *Psinomani* component by Participants (1987), yielded a  $^{14}\text{C}$  date of  $300\pm 70$  B.P. (DIC 760 in Reid 1984:41). Johnson (1995:93) also reported a subsequent calibrated date of A.D.  $1660\pm 95$  from this site.

Although Reid (1984) did not list DjKa-5, on Lake of the Woods, he had previously published the uncalibrated date of “ $1230\pm 125$  A.D.” (no laboratory number; presumably  $720\pm 125$  B.P.) associated with “Sand(y) Lake/Nett Lake?” (Reid in Rajnovich and Reid 1978:48). It is likely that this site was actually the Ash Rapids West (DjKq-5) site from which an identical date was later published as “A.D.  $1230\pm 125$ ” (DIC 569) and suggested to be associated with Ash Rapids Corded pottery (Reid 1984:39). Since the author believes that Ash Rapids Corded is SLW, that date is included as pertaining to a *Psinomani* component. Another  $^{14}\text{C}$  date, assessed at  $260\pm 225$  B.P. (DIC 765), was obtained from the Ash Rapids East site (DjKq-4), which pertains to a component with SLW (Participants 1987).

In summary, there are recent and older SLW sites in northwestern Ontario. If one includes the date from the Ash Rapids West site, assuming that this is actually SLW pottery, an early date of  $720\pm 125$  B.P. and a date of  $260\pm 225$  B.P. respectively can be included (Reid and Rajnovich 1980:70, 72, 73, 77). Although Arthurs (1978) hypothesized that the makers of SLW were probably a rather recent archaeological phenomenon in northwestern Ontario, radiocarbon evidence suggests there were probably also early incursions by the peoples represented by the *Psinomani* culture. Reid (1984:39) suggested that those who made SLW in northern Minnesota probably had a long interaction with Blackduck and Selkirk peoples over several hundred years. His idea

was based on information from the Long Sault and Lady Rapids sites in northwestern Ontario (Reid 1984:39).

Meyer and Hamilton (1994) proposed that by A.D. 1250, the makers of SLW ranged as far north as the Boundary Waters region in Ontario and Manitoba. This is reaffirmed by the one date, A.D. 1230±125, from DjKa-5 on Lake of the Woods (Reid in Rajnovich and Reid 1978:48). It appears likely that by A.D. 1500, although mainly located in the northern half of Minnesota people making SLW had further extended into northern Ontario and southeastern Manitoba (Meyer and Hamilton 1994:127; Participants 1987) and southwestern Manitoba (Nicholson and Hamilton 1997:31). It has been suggested that the latest SLW pottery probably came from northern Minnesota (Lugenbeal 1976:663; Peterson 1986), Ontario, and southern Manitoba, with some occurrences dating to the late 1600's (Participants 1987:57) or even up to about A.D. 1750±100 years (Arthurs 1986:224). However, more contemporary information suggests that SLW was still present in Minnesota during the late precontact period (e.g. the Bradbury phase sites in Birk and Johnson 1992). Also pertinent to this discussion are the numerous, late precontact Northeastern Plains Village sites in eastern North Dakota which have SLW (Table 3.3).

The Mortlach phase may have been the result of ancestral development from an expansion into western Manitoba and Saskatchewan during the late precontact and protocontact periods by Sandy Lake peoples, along with influences from the Middle Missouri villagers (Walde 1994:147). Malainey (1995b:183) suggested that Wascana ware may have closer attributes to SLW than Mortlach phase does as characterized by Walde (1994). The Vickers focus, in southwestern Manitoba, is another cultural classification which is dated to the end of the late precontact and SLW is one of its characteristic wares (Nicholson and Hamilton 1997:31).

While Peterson (1986:17) stated that there is 'tenuous' evidence indicating that SLW may have been made during the early postcontact period, it has been found with

European trade goods in Minnesota (Johnson 1969a; Lugenbeal 1976). In fact, there seem to be many examples of SLW being associated with postcontact items in that state and in other regions. Sites included in the Bradbury phase in central Minnesota have French trade goods, SLW, and Oneota pottery (Birk and Johnson 1992; Johnson 1985). Hence, all of these sites have late dating Sandy Lake components (Table 3.3). Several sites in northwestern Ontario (Arthurs 1978; Participants 1987), along the Red River Valley (Michlovic 1983; Peterson 1986), and in Manitoba (Trottier 1973) also contain SLW associated with European trade items. Some of the Northeastern Plains villages also date to the postcontact (e.g. Michlovic and Schneider 1993). As previously mentioned, the Long Sault site, in northwestern Ontario, is one of the latest dating SLW sites with a corrected date of A.D. 1650 for the 'Selkirk' and Sandy Lake component (Arthurs 1986). A probable late dating SLW vessel is associated with a Selkirk one at the Potato Island site in northwestern Ontario (Koezur and Wright 1976:22). Both the Selkirk composite and SLW lasted until postcontact times and were likely the last precontact archaeological entities in southeastern Manitoba (Dyck 1983; Ens 1998a), northwestern Ontario (Koezur and Wright 1976:22), and northern Minnesota (Peterson 1986). Justin and Schuster (1994:77) reported a late date of  $200 \pm 90$  B.P. (Beta 51692), or uncalibrated A.D. 1660-1840, from the Sandy Lake component in the Basswood Shores site in Minnesota. It is likely a single component site and is one of the most southern occurrences of this ware (Justin and Schuster 1994:79).

Nicholson and Hamilton (1997) suggested that the Vickers focus sites, which have been suggested to have SLW in them, date from about A.D. 1400 to 1500 based on uncalibrated  $^{14}\text{C}$  dates, although the Jackson site may date as late as A.D. 1625. One  $^{14}\text{C}$  sample from the upper component of the Vera site is assessed at  $340 \pm 60$  B.P. (Beta 96109) which is also consistent with other late components at these sites (Nicholson and Hamilton 1997:31). European trade goods and Vickers focus pottery (Bev Nicholson, personal communication, 1998) were recovered there, although it is unclear if any

percentage of SLW is found there. Since this collection was in the process of being catalogued and analyzed just before the time of writing, it was unavailable for examination.

In summary, the number of thermoluminescence and radiocarbon dates obtained from Sandy Lake sites (Table 3.3) is somewhat limited but the absolute dating range appears to be from about A.D. 1000-1750, based on the oldest ones from the Jamestown mounds (Snortland-Coles 1985) and Mooney site (Michlovic 1987), with the latest from the Long Sault (Arthurs 1986) and Basswood Shores (Justin and Schuster 1994) sites. Many more later dating sites containing SLW have been found which date to the late precontact, protocontact, and postcontact periods rather than older ones. Particularly, with the addition of the Bradbury phase (Johnson 1985) the number of these sites increases by seven.

### **3.8 Origins**

Much speculation has occurred concerning the origin and cultural affiliation of the people(s) who manufactured SLW. Gibbon (1994:145) stated that “perhaps the single most important event in [the Late Woodland] period is the abrupt appearance and gradual spread throughout the mixed forests of central Minnesota of a new cultural complex called the *Psinomani* culture. . . .” He (Gibbon 1994:146) further observed that “establishing the time and place of origin of the complex is critical, for it is generally assumed that the *Psinomani* culture abruptly replaced the Clam River-Kathio-Blackduck continuum across central Minnesota and in the Wisconsin tributaries of the St. Croix River.”

It is possible that the *Psinomani* culture originated southeast of Minnesota. Perhaps this belief arose because Cooper and Johnson (1964:479) had mentioned similarities to Raymond focus materials in Illinois. Few examples of Early Woodland pottery are found within the same area as SLW, so it does not likely directly relate. When suggesting precursors to SLW, Middle Woodland pottery such as Besant, Laurel, and

Brainerd (the latter known as Avonlea in Canada) are found in many sites that overlap with the distribution of SLW (e.g. Meyer and Hamilton 1994); so the people who made this Middle Woodland pottery may be related to later SLW potters. Many other complexes of this time were present in east central and southeastern Minnesota, such as: Malmo, Howard Lake, Sorg, and Fox Lake (Gibbon and Caine 1980:57). Apparently, these complexes correspond to the different major biotic divisions in that state (Gibbon and Caine 1980:58). Although these Middle Woodland vessels are generally conoidal forms with thick walls, other characteristics such as cord marked exteriors, exterior bosses, and interior cord wrapped tool impressions (e.g. Fox Lake Vertical Cordmarked in Anfinson 1997:55) persist into Late Woodland vessels, particularly SLW. Undecorated vessels from the Middle Woodland period are also known (e.g. Fox Lake Horizontal Cordmarked in Anfinson 1997:55). Thus, there are some similarities between Middle Woodland ware and SLW but these are limited.

Scalp Creek ware (Zimmerman 1985:66), of the Loseke Creek complex from South Dakota, seems to have some physical similarities to SLW. It is a Middle Woodland ware which is globular, rather than the typical conical shape, and is fairly thick, grit tempered, cord roughened, and has straight rims (Zimmerman 1985:66). Interestingly, some vessels are plain and others have exterior bosses (Zimmerman 1985:66) like a number of SLW vessels from North Dakota.

Circumstantial evidence exists for a continuum between early Late Woodland manifestations such as St. Croix or early Blackduck and younger *Psinomani* sites in central Minnesota, since they probably both relied on wild rice and bison subsistence (Gibbon 1994). Gibbon and Caine (1980:63) pointed out that there were continuities between the transitional St. Croix phase and Late Woodland cultures. Although economic orientation does not necessarily indicate a relationship to a cultural continuum, it is logical that people residing in the same regions would rely on similar subsistence patterns and follow those used efficiently in the past. For example, the areal range of St.

Croix is from northwestern Wisconsin across Minnesota into the Red River Valley (Gibbon and Caine 1980:61) which crosscuts several environmental zones and corresponds fairly closely with the east/west extent of SLW. Associated projectile points were triangular or Prairie Side-Notched and some site locations are known to have been wild rice harvesting or fishing spots (Gibbon and Caine 1980:61). Other similarities to SLW which are found in St. Croix vessels include: straight to slightly excurvate rims, very slight orifice constriction, unthickened lips, moderate flaring in the body, and cord roughening (Gibbon and Caine 1980:61). However, St. Croix vessels are subconoidal, some have moderate orifice constriction, and most are decorated with bands of dentates or cord wrapped object impressions on the exterior (Gibbon and Caine 1980:61), which differs from SLW. Blackduck, Kathio, and Clam River, all early Late Woodland phases, also have similarities with St. Croix in areal overlap, probable subsistence practices, and have the characteristic patterns of cord wrapped tool impressions.

Blackduck, Kathio, and Clam River phases are early Late Woodland archaeological manifestations which overlap in areal extent with SLW. However, it is generally agreed that SLW replaces Blackduck and Kathio in Minnesota. Clam River materials are sometimes found associated with SLW (e.g. Fickle site in Kolb 1988), so it is not likely to be antecedent. Johnson believed that Blackduck, Kathio, Clam River, and Madison pottery formed a closely related series from southern Wisconsin into southern Manitoba, paralleling the Grasslands/Forest border (Birk and Johnson 1992:204). No European artifacts have been found with Blackduck and Kathio (Birk and Johnson 1992:206), suggesting an earlier Late Woodland time frame for them.

Reid and Rajnovich (1980:80) noted that there were five cord roughened pottery types in Minnesota, Manitoba, and northwestern Ontario: Cemetery Point Corded (MacNeish 1958), Nett Lake Plain (Evans 1961), SLW (Cooper and Johnson 1964), Snyder Dam Occupation 1 (Syms 1979), and Lake Benton Vertical Cordmarked (Anfinson 1979). The other four types will be discussed in Chapter Four, but perhaps the

best candidate for a precursor to SLW is the pottery of the Lake Benton phase. This pottery is a transitional Middle/Late Woodland manifestation (A.D. 700-1200) found in southern Minnesota, South Dakota, and one site in northern Iowa (Anfinson 1997:75):

By A.D. 700, however, more dramatic changes are evident in ceramic technology, and the use of burial mounds appears to be widespread. These changes in ceramics and mortuary practices mark the end of the Fox Lake Phase and the beginning of the Lake Benton Phase. The Lake Benton Phase may have survived well into the Late Prehistoric Period, co-existing and probably interacting with Plains Village and Oneota complexes.

Anfinson (1997:75) also noted that Lake Benton phase pottery (Figure 3.5) is closely related to other wares (Reid and Rajnovich 1980:80), particularly the St. Croix-Onamia series in middle Minnesota. Although trailed lined and bossed decorations disappear before the Lake Benton phase, the widespread use of cord wrapped tool impressed exteriors, thinner walls, and smoothed surfaces are important (Anfinson 1979:75). These vessels are generally described as moderately sized subconoidal with: slightly inflated to slightly outflared rims, round or flat lips, thickened shoulder walls, vertical cord marking (perhaps cord rolled), smoothed areas below decoration, and some smoothed surface finishes (Anfinson 1997:77). Decorations can be nonexistent, dentate, cord wrapped tool impressed (occasional interior), bosses, or punctates (Anfinson 1997:77). Lake Benton plain is undecorated and smoothed or smoothed over corded, and the rims are straighter as well as thinner (Anfinson 1997:77), which makes them fairly similar to Sandy Lake Smooth, plain variant. Apparently, the subsistence mode did not change from the previous Fox Lake phase, in that evidence suggests that Lake Benton people hunted bison, small mammals as well as birds and fished (Anfinson 1997:83). St. Croix pottery has been found at several sites which are associated with wild rice procurement, which indicates a likely continuum with the *Psinomani* culture who later occupied these sites (e.g. Gibbon 1976).



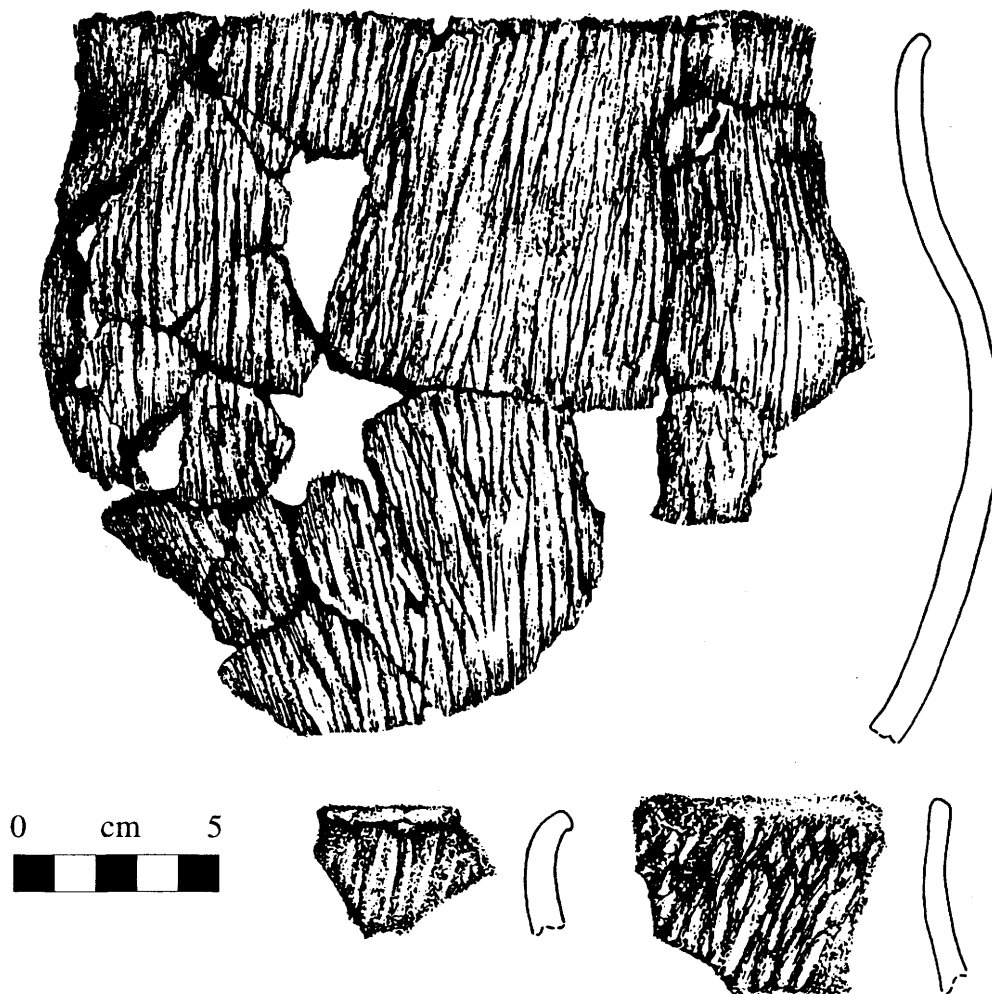


Figure 3.5. Lake Benton Vertical Cordmarked partially restored vessel and other rim sherds from the Pedersen site (in Anfinson 1997:79; from Hudak 1976). Note the similar profile and surface finish to some Sandy Lake ware vessels.

### **3.9 Fate and Ethnic Identification**

There is little information available to indicate what happened to the people who made SLW, other than possibly they existed long enough to be a recognizable postcontact group. As with most Native groups that lived in central North America, they may have been affected by epidemics or encroachment by Europeans. It is certain that at some point in time after contact these people stopped making the highly proficient pottery known as SLW. The Bradbury phase (Johnson 1985) may be the best indication of what happened to these people's material culture in Minnesota (as explained in Section 4.5).

**3.9.1 Ethnic Identification.** Although Pettipas (1997) outlined some problems with assigning ethnic markers to archaeological 'cultures', one of the better examples to try this with is the *Psinomani* culture since it persisted into early postcontact times. Even though no one will likely ever know exactly which language group or groups manufactured SLW, this author has also fallen victim to the "irresistible urge on the part of archaeologists to identify Late Precontact cultural assemblages with historically-known peoples no matter how challenging, if not ill-fated, the attempt might be" (Pettipas 1997:69). As SLW has been found in sites containing Postcontact artifacts (e.g. Bradbury phase sites in Birk and Johnson 1992; Johnson 1985), it is a reasonable candidate for the association of ethnicity. As Arthurs (1978:62) so aptly stated: "the late prehistoric-early historic context of the Wanikan Culture has led to speculation on its ethno-historic identity." This idea was formulated when an analogy was made to the groups encountered by the earliest Europeans in the area where SLW is found. Most researchers agree that the early Dakota or the Assiniboine made SLW (e.g. Johnson 1985; Participants 1987). Early French arrivals to Minnesota, particularly the Jesuits, recorded encounters with the eastern Dakota at or near the Bradbury phase sites. These records, along with co-occurrences of trade goods and SLW material led to the proposal that the peoples who produced *Psinomani* culture were the ancestral Dakota. The

following section is a formulation of the most likely explanation of possible ethnic identities and connections for the makers of this ware.

As with most late precontact, protocontact, or postcontact pottery, there is much speculation about the descendants of the *Psinomani* culture. Typically, this is decided by the groups that lived in the region or localities where the material remains of an archaeological culture were found, by the direct historical method. Peterson (1986:2) stated that “the study of Sandy Lake Ware may be instrumental in determining the historical antecedents of the historic Sioux” since some younger dates associated with this ware (Arthurs 1978; Lothson 1972) are later than the contact period in several regions. There are also postcontact artifacts associated with SLW (e.g. Arthurs 1986), particularly in the Bradbury phase, to support this idea.

Originally, the ethnic identity of the makers of SLW was implied by Cooper and Johnson (1964), who noted that Quimby (1961) described thin, cord marked pottery associated with the historic Chippewa (a.k.a. Ojibwa), dating from A.D. 1640-1760. Cooper and Johnson (1964) stated that this pottery was similar to SLW (which is the case for some attributes). Quimby (1961:125) noted that: “Among the ordinary utensils were ladles and bowls of wood, containers made of bark, and large and small pottery vessels with open mouths, flaring rims, and round bottoms. . . . These vessels made of fired clay tempered with particles of granitic stone were covered with the imprints of cord-wrapped paddles . . .” He also suggested that these people were corn or wild rice harvesters and depended largely on fishing (Quimby 1961:123), of which the latter two are thought to have been true for the makers of SLW. Birk (1977a) later supported this idea by suggesting that SLW was made by the Ojibwa, as they were living in Minnesota or adjacent areas and dependent on wild rice. The groups that Quimby (1961) described lived near Lake Superior and northern Lake Huron, extending farther east than the currently recognized extent of SLW (Figure 1.1). Although few SLW sites seem to contain many fish remains, with the exception of the Wanipigow site (Trottier 1973), this

finding may be a preservation factor rather than a cultural one. Since these Chippewa people were likely more recent arrivals to Minnesota (cf. Ray 1974), the general consensus amongst archaeologists has changed to a proto-Siouan origin for SLW (Birk and Johnson 1992; Johnson 1985; Michlovic 1982; Participants 1987).

The first researcher to suggest that SLW may have been made by Siouans was Johnson (1969), who specified that SLW might be the product of protocontact Eastern Dakota people (Arthurs 1978:62). Arthurs (1978:62) stated that Dawson (personal communication, no date) suggested SLW in northwestern Ontario sites might represent an influence or incursion of more southern Mississippian peoples into that province. The majority of researchers have agreed with the Siouan cultural affiliation of SLW, ranging from general to specific.

Vickers (1949:4) was one of the first researchers to discuss the Assiniboine, when he suggested that the Assiniboine River Valley was their early home. MacNeish (1958) suggested that by about A.D. 1000 Siouan speakers (Assiniboines of the Manitoba focus) inhabited the southern third of Manitoba and that related groups occupied southeast Saskatchewan, the Lake of the Woods region, and northern Minnesota. Although this research is not recent, he may have been correct in his assumptions about Siouan movement, as suggested by short term postcontact reconstructions such as those by Arthurs (1986) for the Rainy River region. Wright also thought that the culture in which SLW was part of might be Assiniboine (Koezur and Wright 1976:39). The informal consensus at the 1988 Lake Superior Basin Workshop was that the makers of SLW in what is now Canada were probably Assiniboine, because sites were later occupied by historic groups of this affiliation (Participants 1987:57). Dyck and Morlan (1995:193) proposed that: "If Wascana Ware was made by western Assiniboines, then Sandy Lake Ware still could have been made by either eastern Assiniboines or by proto-Eastern Dakotas." After considering these differing viewpoints, it seems that SLW was

probably made by proto-Siouans, who were later known as Assiniboine in the more northern extent (Arthurs 1986) and Eastern Dakota in Minnesota (Gibbon 1994).

There has been speculation about who were the predecessors to the Eastern Dakota for some time. Wilford (1955:136) suggested that the Kathio focus represented the ancestral Mdewakanton (Eastern) Dakota at Mille Lacs Lake, Minnesota (Birk and Johnson 1992:203). He tested the Aquipaguetin Island site and accepted it as the Recollect French friar Louis Hennepin's wintering spot in 1680, finding Late Precontact cord-marked pottery and Eastern Triangular projectile points (Birk and Johnson 1992:203). Alternatively, McKern (1963) attributed his Clam River focus, in northwestern Wisconsin, to the Eastern Dakota based on circumstantial burial evidence (Birk and Johnson 1992:203; Wilford 1955:136-137). However, both the Kathio and Clam River foci date several hundred years earlier than French contact with the Dakota (Birk and Johnson 1992). Testing at several sites south of Mille Lacs Lake, resulted in the recovery of Sandy Lake, Oneota-like pottery and some European trade goods at the Cooper site (21ML9), which led Johnson (1985) to define the Bradbury phase of Mdewakanton Dakota cultural development (explained in Section 4.5). Thus, the eastern Dakota have been linked with SLW (Birk and Johnson 1992) with a measure of confidence. Other sites in Minnesota which date to Protocontact times (see Section 3.9) also imply that the manufacture of SLW continued for some time after European contact since it is found in conjunction with Postcontact artifacts.

Gregg (1994:93) discussed the idea of this ware being made by several Siouan groups:

whether proto-Middle Dakota, proto-Western Dakota, or proto-Assiniboine peoples made Sandy Lake pottery, the finds of this pottery in the central portions of the study area suggest that Siouan groups with strong Woodland ties were traditional prehistoric occupants of the Northeastern Plains. This interpretation of archaeological data is supported by ethnohistoric documentation of Yanktonai Dakota establishing winter villages on the James River in South Dakota at least as early as 1725 (Howard 1977:2).

Thus, he noted several possibilities of different Siouan groups being related to SLW, and that particularly the Yanktonai constructed camps by at least 1725 in the area just southwest of where SLW is found along the James River, in North Dakota (Schneider 1982).

A somewhat later documentation of Dakota people on the Northeastern Plains comes from southern Manitoba. In fact, these apparent later incursions into the province may simply be a continuation of old practices as evidenced by the presence of small, diverse amounts of SLW (discussed in Chapter Five). Physical evidence is also provided by three large circular features, thought to be fortifications, found near the present city of Portage la Prairie and associated with the Dakota people (MCHC 1990:1). The Dakota, who occupied the area after the Minnesota Uprising of 1862 (MCHC 1990:5), are thought to have built these camp entrenchments for defensive purposes. This practice of fortifying villages is thought to have continued from about A.D. 1000 with the influence of Mississippian or Middle Missouri cultures. In 1853, one Siouan group was still living around Lake Traverse, Minnesota and was called *Chonkasketonwan*, which means 'dwellers in a fort' (MCHC 1990:5). Thus, the finding of the fortified Shea site (Michlovic and Schneider 1993) in North Dakota which contains mostly SLW, indicates that the people who made this pottery were likely part of a continuum of Siouan speakers who lived in fortified campsites. It is noteworthy that Siouan groups still reside in southern Manitoba today.

Other researchers have proposed specific identifications for different regions where SLW is found, such as Gibbon (1994:146), who stated that "the complex is almost assuredly related to the historic Santee Dakota." Walde (1994:147) further observed that:

because Sandy Lake ware was made in the northeastern plains and adjoining woodlands during the late precontact and indirect contact periods, it has generally been identified with the Siouan peoples who lived in that area [sic] at the time of European contact (Michlovic 1983, 1985;

Gibbon 1994; Meyer and Hamilton 1994; Schlesier 1994), that is, the Santee, Teton, Yankton, and Yanktonai.

Gregg (1994) suggested that the makers of SLW may have been proto-Assiniboine, proto-Middle Dakota, or proto-Western Dakota. Since SLW is found across a large area and apparently endured for a long time, it is suggested that more than one group may represent the cultural descendants of the peoples who produced the *Psinomani* culture.

While SLW may have been made by proto-Siouan peoples, Wilford (1941) suggested that makers of Oneota were also proto-Siouan and this idea has persisted with researchers from Minnesota and Wisconsin. This determination may explain why both kinds of pottery share similar attributes, they are found together, and syncretic vessels exist (see Chapter Four).

SLW was the most common Woodland type in the Cooper and Wilford village burials, and it probably was the pottery associated with a Dakota occupation of these sites (Lothson 1972; Peterson 1986). The mound contained pottery vessels and French trade goods, dating from about A.D. 1670-1760, that could be correlated with artifacts from the village site, which indicated that the two Cooper sites were contemporaneous (Lothson 1972; Peterson 1986). It was determined that the late inhabitants at these sites were the eastern Dakota (Mdewakanton), as this group is documented in some postcontact records for the area. The presence of SLW in conjunction with French historic goods indicates that the *Psinomani* culture persisted until after contact and was produced by the 'Dakota' as first encountered by the French (Birk and Johnson 1992). This example provides further evidence that the makers of SLW were indeed Siouan or particularly eastern Dakota in central Minnesota.

Walde (1994:146-147) presents an interesting explanation of the similarities between the very late precontact/protocontact Mortlach and SLW pottery. These similar attributes include some straight and S profiles, stamped as well as vertically oriented cord

impressed surface finishes, and lip notching (Walde 1994:145). Furthermore, Walde (1994:146-147) suggested that:

It seems likely Mortlach ceramics are successors to Sandy Lake and represent a continuation of the *Psinomani* culture in south-central Saskatchewan, northeastern Montana, and northwestern North Dakota. It is difficult, however, to suggest that Mortlach represents an expansion of *Psinomani* peoples from southeastern Manitoba after 1500 A.D.

In other words, he believed that Mortlach is likely a successor and a continuation of the *Psinomani* culture with some changes; however it may have resulted from an expansion from southeastern Manitoba after A.D. 1500. He (Walde 1994:147) tentatively suggested: "If, as seems likely, Sandy Lake is identified in Saskatchewan, it may be that the Mortlach Phase is an *in situ* development from Sandy Lake. . . . I do not feel that the present state of knowledge allows a sufficient degree of confidence to choose between the migration and local development alternatives." Unfortunately, the few dated SLW components have not helped much in attempting to sort out this problem (Table 3.3). Malainey (1995b:183) disagreed with some of Walde's (1994) findings, and has suggested that Wascana ware (Kehoe 1959; Malainey 1991), which she asserted is found north of the Qu'Appelle Valley, is probably closer to SLW than Mortlach. She listed the traits that Walde (1994:145-148) found most similar between SLW and Mortlach, including: the globular shape, vertical or slightly S-shaped rim, slight neck constriction, vessel surface finish and decoration, lip notching and textile impressed surface finish (Malainey 1995b:183). She suggested that these traits are more commonly found on Wascana ware. Possibly, Mortlach is the result of the *Psinomani* culture moving northwest and interacting with other bison hunting cultures and Middle Missouri villagers in Saskatchewan, Manitoba, and Montana. This movement would parallel the movement made later by the Assiniboine, who are suggested to be the descendants of groups who produced northern *Psinomani* materials. Generally, later dates are associated with SLW in northern Minnesota, northwestern Ontario, and southern Manitoba as previously discussed but some of the sites in these locations do not have absolute dates or have



disturbed stratigraphy. The Mortlach/Wascana ware topic will be dealt with further in Chapter Four.

Other researchers (Gregg 1994:93) and a consensus of archaeologists (Participants 1987:59-60) have suggested that SLW was made by early Assiniboine peoples:

it was the informal consensus of the symposium that the cultural affiliation of Sandy Lake is Assiniboine. When Louis Hennepin visited the Minnesota Sioux in the late 17th century, he was told that the Assiniboine had once been a part of the central Minnesota Sioux people, but had split off in the not too distant past to become a separate group. By the time La Vérendrye reached Lake of the Woods in the early eighteenth century, the Assiniboine were in the Boundary Waters region and were in the midst of moving westward into Manitoba.

Russell (1991:174) has observed that the Assiniboine were present to the west in Saskatchewan, as indicated by the journal of Henry Kelsey in 1691, long before the account mentioned above. Perhaps La Vérendrye witnessed the end of a seasonal incursion into the Lake of the Woods area, maybe for wild rice gathering, which the Assiniboine apparently continued to do (Ray 1974:35; Snortland-Coles 1979:93-94). The fact that Assiniboines were recorded in east central Saskatchewan as early as the late 17th century (Russell 1991:174), provides an opportunity to identify ethnically late pottery making groups who made Wascana ware (Dyck and Morlan 1993:193), Mortlach (Walde 1994), and possibly SLW in this area. The distribution of Duck Bay ware likely parallels the Assiniboine migrations which is also intriguing. Since the attributes of SLW and some types of Duck Bay ware, namely Notched Lip, Undecorated, and Decorated Lip, are so similar they are probably representative of the same pottery. In this case they were likely made by the proto-Assiniboine.

As previously mentioned, Wilford (1955:136) tried to prove ties with Louis Hennepin's wintering site, known as the Cooper site, which now is affiliated with the Bradbury phase in Minnesota. Although Evans (1961) had proposed that the proto-Assiniboine made Blackduck pottery, there is now general agreement that they were actually proto-Algonquians. K. Dawson (personal communication, in Arthurs 1978:62)

believed that the people who made SLW represented an incursion into northwestern Ontario or the influence of Mississippian peoples from the south. This idea seems to have some evidence as discussed below.

Perhaps the most plausible explanation for the ethnic affinity of SLW is that the characteristic decorative style found in northwestern Ontario and southeastern Manitoba was the product of the proto-Assiniboine. This may explain why these vessels are similar enough to SLW found in Minnesota to be categorized as the same ware, likely the product of early Eastern Dakota (Birk and Johnson 1992), but are characterized by slightly different decorations. This idea is plausible because the people who moved north into what is now Ontario likely would have retained the same pottery making techniques but they may have been influenced by the groups living there (i.e. the characteristic row of punctates typical of Selkirk from this area). The basis for this idea is the well-documented Assiniboine/Cree alliance in southern interior Canada that is known to have been in existence at the time of European contact (e.g. Ray 1974). Hence, the often-cited Assiniboine-Cree relationship probably existed much earlier than Postcontact times. The similarities between southern Selkirk and SLW, the finding of them together in many sites, as well as the syncretic vessels noted in Chapter Four lend credence to this idea.

Another reason for an earlier relationship between the Assiniboine and Cree was the split between the former and the Yanktonai Sioux before the fur trade began (Russell 1991:214). Ray (1974:4) postulated that this break occurred in about 1747-1757, based on an account by David Thompson. It is known from historical records that incessant warfare plagued them from about 1670-1870 and oral tradition suggests that arming of the allied Cree and Assiniboine started this conflict (Ray 1974:14).

The author agrees with Arthurs (1986:263-264), who has explained the most likely scenario for the ethnicity of SLW:

While this would correlate fairly well with the historically documented incursion of the Dakota into the Boundary Waters area in the early 18th century, it may be argued just as strongly that Sandy Lake ceramics in the area represent not only the Dakota, but also the closely related Assiniboine. The distribution of Sandy Lake ceramics through

northwestern Ontario and Manitoba correlates closely with the distribution of the historic Assiniboine, and the sparse recoveries from sites through the area are what might be expected of a group that passed through the region over a relatively short period of time.

While other researchers (MacNeish 1958; Meyer and Hamilton 1994; Walde 1994:147) have hinted at this idea of an earlier proto-Assiniboine and Cree relationship, it has not been suggested for SLW and Selkirk. Walde (1994:147) has suggested that Mortlach represented the early Assiniboine. Also, Mortlach could be the material remains of a related group such as the Hidatsa as suggested by Malainey (1991:372). It is noteworthy that there are a few earlier  $^{14}\text{C}$  dates associated with SLW in northwestern Ontario as discussed previously. These ideas also suggest that when they broke away from the Dakota, then pottery from the two groups would probably bear basic similarities but would have diverged stylistically through space and time (Arthurs 1986:264). While SLW in Minnesota was likely made by the Eastern Dakota, a slightly different version was probably manufactured by the early Assiniboine in northwestern Ontario and in Manitoba. The author also agrees with Arthurs (1986:264) suggestion that an early Assiniboine (SLW) and Cree (Selkirk) alliance was in place well before contact.

### **3.10 Summary**

This chapter has reviewed the main points of previous research involving geographical extent, other artifacts, cultural affiliation, subsistence, dating, origins and fate of the peoples who made SLW. It is hoped that this thorough overview takes into account as many viewpoints as possible.

As Peterson (1986:177) stated so appropriately, “The analysis presented in this thesis [is] not suggested to represent a conclusive analysis of Sandy Lake Ware. . . . Rather the information is designed to act as a continuation of the efforts conducted by Cooper and Johnson (1964), Birk (1979), and Arthurs (197[8]).” This thesis represents the first study of SLW in Manitoba and adjacent locations as well as the most recent overview of the ware in over 10 years, and hopefully will provide a useful source for researchers interested in more details about this ware. The next chapter discusses

similarities and associations between SLW and other pottery, as well as taxonomic problems.

## CHAPTER FOUR: CLASSIFICATION CONTROVERSIES

### ***4.1 Introduction***

There are several categorization systems used by archaeologists to organize similar assemblages, sites, and localities. The taxonomic schemes used previously and presently in the area where SLW is found as well as the study area will be discussed in the following section. Then, the many methods of categorization of pottery within these areas will be reviewed, since the author found some of them to be paradoxical and inconsistent. Following that section, similar and associated pottery, as well as syncretic vessels will be discussed. The Bradbury phase (Johnson 1985) is summarized in the last part of this chapter. Pertinent terms are listed in the glossary (Appendix A).

***4.1.1 Archaeological Taxonomic Systems.*** One of the early North American archaeological classification methods, which deals with complete assemblages rather than just pottery, is the Midwestern Taxonomic system (MTS) (Table 4.1). It was proposed by McKern (1939) and utilized by many midwestern archaeologists in the early to mid 1900s. Kehoe (1990:31) described the essential nature of this system: "The basis for McKern's method, as for the Linnaean system, was the recognition of discrete elements appearing grouped into populations. Diversity lay both within populations and between populations. . . ." McKern proposed the use of six divisions in the MTS, ranging from smallest to largest unit: component, focus, aspect, phase, pattern, and base (Syms 1977:64). The MTS was used by Wilford (1941, 1955) in early Minnesota reports and by Vickers (1945, 1948), for southern Manitoba sites, with some modifications to Wilford's chronology (Syms 1977:64). Slightly later, MacNeish (1954,

**Table 4.1. Different archaeological classification schemes used in central North America, showing similar relationship divisions.**

Midwestern Taxonomic System (McKern 1939)	Willey and Phillips (1958)	Syms (1977)
Component	Component	Assemblage
Focus (spatially restricted)	Phase (spatially restricted, short temporal)	Complex
Aspect		Composite
Phase (temporally restricted)	Tradition (primarily temporal) Horizon (primarily spatial; approx. contemporaneous) Horizon style/Pottery tradition (large spatial, short temporal)	Configuration
Pattern	Culture Civilization	Pattern
Base	Climax	

**Spatial Divisions (Willey and Phillips 1958:18-21):**

Site - single location (e.g. small camp to large city)

Locality - site to community size (e.g. more than one site of a culture)

Region - considerably larger unit of space; related to geography (e.g. Florida Glades)

Area/subarea - larger than region; similar to ethnographic areas (e.g. Southwest U.S.A.)

1958) named several foci or cultures for southern Manitoba including several dating estimates, building on Vickers' work. Some of MacNeish's (1958) terms are still employed in archaeological literature (e.g. Selkirk), and some researchers still use the MTS (e.g. Nicholson's 1991 Vickers focus).

A newer scheme of archaeological classification was introduced by Willey and Phillips (1958), essentially corresponding to the beginning of radiocarbon dating. Their scheme is another typically used classification tool in the regions where SLW is found (e.g. Mortlach phase in Walde 1994). The Willey and Phillips (1958:21-57) scheme consists of two basic divisions of component and phase, a couple of larger integrative units called horizon and tradition, as well as two maximum elements called culture and civilization (Table 4.1). Mayer-Oakes (1970) was one of the first researchers in Manitoba to use the more flexible definition of phase, which has temporal meaning (Syms 1977:68). Thus, many researchers in central North America have used and continue to utilize this classification method.

Syms' (1977) taxonomic system has been used increasingly by researchers in central North America within the study area (e.g. Gregg 1985; Meyer 1981; Paquin 1995). "The order in which Syms' taxonomic entities (assemblage, complex, composite, and configuration) should be used is also the natural order of archaeological discovery" (Lenius and Olinyk 1990:78) which make it a useful system. An example of Syms' system is the Lloyd site assemblage categorized in the Pehonan complex, which in turn is part of the Selkirk composite of the Western Woodland Algonkian configuration and Woodland pattern (Lenius and Olinyk 1990:78; Meyer and Russell 1987:16). Lenius and Olinyk (1990) examined large numbers of vessels from the Rainy River region, which is related to the study area, and presented revisions to the Late Woodland taxonomy using Syms' system. Some researchers have referred to Sandy Lake as a complex (presuming that they are using the Syms' system) although they do not specify what else is included in this classification, or what composite, configuration, or pattern it is part of (e.g. Burns 1994; Gregg 1994; Johnson et al. 1977:24). While the author would prefer to use Syms' system, the majority of sites with SLW are in the U.S.A. where components are classified using the Willey and Phillips (1958) system.

Only a few archaeologists have made any attempt to formally categorize Sandy Lake assemblages, other than the ware itself. Beginning with the original description, Cooper and Johnson (1964:479) decided that "the quantity of nonceramic artifacts in association with the Sandy Lake pottery from known sites and collections is so limited that any discussion of the total assemblage and any attempt to compare this assemblage with the Blackduck or Clam River foci assemblages is not feasible." Birk (1977a) and Gibbon (1994) used part of the Willey and Phillips (1958) system (discussed further on), labelling the assemblages as the *Wanikan/Psinomani* 'culture' and Johnson (1985) introduced the Bradbury phase (Figure 4.1), in which site assemblages contain SLW and Oneota pottery. However, no other attempts at categorizing Sandy Lake components have been made.

<p><b>Sandy Lake Ware Classification 1</b></p> <p>-Willey and Phillips' (1958) System          -based on Cooper and Johnson (1964); Birk (1979); Johnson (1985); and Gibbon (1994)</p> <p>plain variant          notched variant</p> <ul style="list-style-type: none"> <li>Sandy Lake Smooth type</li> <li>Sandy Lake Corded type</li> <li>Sandy Lake Stamped type</li> <li>Sandy Lake ware (component)             <ul style="list-style-type: none"> <li>Bradbury phase (in contexts with French trade items)</li> <li>Late Woodland tradition</li> <li><i>Psinomani</i> culture</li> </ul> </li> </ul>
<p><b>Sandy Lake Ware Classification 2</b></p> <p>-from Peterson (1986) who indicated a different pottery classification</p> <p>cord marked variant          smoothed over cord marked variant          Smooth variant</p> <ul style="list-style-type: none"> <li>Sandy Lake Shell Tempered type (shell/grit included here)</li> <li>Sandy Lake Grit Tempered type</li> <li>Sandy Lake ware (component)             <ul style="list-style-type: none"> <li>Late Woodland tradition</li> <li><i>Wanikan</i> culture</li> </ul> </li> </ul>

**Figure 4.1. Hierarchical representations of Sandy Lake classification.**

**4.1.2. Pottery Classification.** Archaeological pottery may be classified using a number of different methods. In terms of the most basic categorization, the author differentiates between pottery as being unvitified central North American Aboriginal hand built creations as opposed to ceramics, which are vitrified, often glazed, usually made using a wheel, and in postcontact contexts (typically derived from European sources) (Rice 1987). Most archaeologists use these two terms interchangeably but it seems logical to differentiate between two artifacts classes which are manufactured and fired completely differently. Regardless of this point, this section presents explanations of the different typologies used in adjacent regions where SLW is found, since it is often classified within other systems than those originally used by Cooper and Johnson (1964).



One of the first researchers in North America to develop a seriation of pottery, using wares and types, was Kroeber (1916), who worked in the southwestern United States (Willey and Sabloff 1980:95). This system is explained by Rice (1976:538-539):

“Ware” is the classificatory unit of the type-variety system which deals with the technological attributes of pottery relating to paste composition and surface finish. These attributes include texture, temper, hardness, thickness, color, slip (presence, absence, color), and the smoothing, luster, and “feel” of the surface, whether slipped or unslipped. This unit therefore embraces the attributes which most directly reflect patterns of clay and temper selection and preparation, and vessel forming and finishing techniques. . . . The chief obstacle to implementing the ware concept is that paste composition and surface treatment are two independent variables.

As alluded to by Rice (1976), the ware concept is problematic. Another uncertainty with this classificatory unit is that some researchers have used surface finish and paste (Cooper and Johnson 1964), while others have used rim form as the defining attribute (Lehmer 1954:41; Malainey 1991; Michlovic and Swenson 1998:13). However, when Cooper and Johnson (1964) introduced their ware, and used the surface finish of SLW vessels to define two types (discussed in Chapter Two), the type-variety system (also in Anfinson 1979) was commonly used by many archaeologists. Their splitting of Sandy Lake Smooth and Sandy Lake Corded types (Figure 4.1) into notched and plain variants (based on decoration) was also a decision based on how archaeologists were classifying pottery at that time. This system still continues to be used by some researchers. Peterson (1986) suggested that the temper attribute, rather than surface finish, be used to divide SLW into types. Since there are some vessels which have both shell and grit temper, this does not really allow for type divisions. Although there are problems with the ware concept, it is still used most often to classify SLW. The author chose to keep the original definition, because it seems to be the most relevant and recognized form, particularly when trying to sort pottery from Canadian sites where almost all is tempered with grit (exceptions are noted in Figure 2.11).

In considering archaeological pottery, one must remember the definition of a ware now typically used in central North America. This interpretation is generally regarded as

a category of pottery which is uniform in terms of paste characteristics (temper), exterior finish, decoration and general vessel form (Butler and Hoffman 1992:6; Calabrese 1977:30; Lehmer 1954; Meyer 1998:49).

Reid and Rajnovich (1980:84) had problems with classificatory units ('type') and thus did not employ one at all for Ash Rapids Corded pottery. However, their usage of 'Master Ceramic charts' in several Ontario publications was a useful way to organize and illustrate their data (see also Hamilton 1981). Schneider and Kinney (1978:33-34) noted similar and many other problems when trying to determine if Mortlach pottery, from the Evans site in North Dakota, should be classified as a type or a ware and assigned to a complex or phase. For this and other Mortlach sites, they used a term created by Raymond Wood called aggregate (also in Malainey 1991) which entailed a group of cultural manifestations within a given space and with artifacts from sites where there is no assurance that they are associated (Schneider and Kinney 1978:35). Mortlach Check-Stamped was named a type by Wettlaufer (1955:20-21). Thus, several archaeological taxonomies have and continue to be used in the author's study area.

**4.1.2.1 Woodland.** Most archaeologists classify SLW as Late Woodland pottery. The Woodland cultural tradition is explained by Michlovic and Swenson (1998:12):

In archaeological terms, there were Woodland peoples situated east of the Northeastern Plains in the Minnesota lake-forest country. The term Woodland, however, refers not to the habitat but to an archaeological cultural tradition and period dated to the past 2000 years and defining a distinctive way of life. This Woodland lifeway included a heavy dependence on hunting and gathering, only a limited use of domestic plants, and for the most part, a mobile pattern of land use, moving through the seasons of the year to places where resources were most likely to be abundant.

This cultural tradition followed the Archaic time period and is defined by the introduction of pottery, the bow and arrow, as well as the building of earthen mounds (Anfinson 1997:145). The Woodland tradition (about 500 B.C.-A.D. 1750 in Anfinson 1979:225) is divided into Early, Middle, and Late divisions with the latest one continuing in some

regions after European contact. Sandy Lake ware is considered to be Late Woodland pottery in Minnesota, Wisconsin, northwestern Ontario, and Manitoba as it is globular, shell or grit tempered, and dates through to the postcontact period.

Snortland-Coles (1985:5.2) commented that researchers are often limited when classifying artifacts because there is more than one typology in use within an area (e.g. Plains Woodland and Plains Village wares in an assemblage from North Dakota). This may cause some confusion. SLW is assigned to the Late Plains Woodland (A.D. 600-950 in Kordecki et al. 1993:11) in North Dakota and considered partly contemporaneous with the ascribed dating range of the Plains Village tradition (A.D. 950-1650 in Kordecki et al. 1993:11) in that state as well as southwest Minnesota (Anfinson 1997:124). This assignment is problematic since almost all dates from components with SLW are later than A.D. 950 except for the Mooney and Jamestown Mound sites (Michlovic 1987; Snortland-Coles 1985), suggesting that this ware should be completely included with the Plains Village tradition. Although many of the large survey projects which have occurred in North Dakota (e.g. Gregg et al. 1985, 1986; Kordecki et al. 1993) have identified many Plains Woodland and Plains Village components, there seems to be little differentiation between the two. Often a component has simply been labelled Plains Village if it was considered to be dated later than A.D. 950.

The culture history differs significantly from adjacent Minnesota and Manitoba, due to the presence of large Plains Village populations mainly in the Missouri River Valley. People of the Middle Missouri tradition lived in substantial sedentary village sites, participated in extensive trade networks (e.g. Ahler et al. 1991), and strongly influenced the surrounding areas. Thus, they differed from the nomadic Woodland and Plains groups to the north in Canada or in Minnesota. Schneider (1982) developed a five part cultural chronology for the upper James River region in eastern North Dakota, from the results of survey, several site excavations, and chronometric dating. It has continued to be used with some modification (Gregg 1987:30). Plains Village components in the

James River Valley were assigned to the Stutsman focus (Kordecki et al. 1993:27; Wheeler 1963) but they are now grouped under the Northeastern Plains Village ware group (Michlovic and Swenson 1998). Kordecki et al. (1993:15) noted that “some level of the Plains Woodland tradition probably endured until historic contact time in the James River Valley, although the Plains Village lifeways dominate the region after about A.D. 950 or 1000.” It is likely that the same case is true for the nearby Red River Valley of eastern North Dakota (Gregg 1987:37). As is evident from the Shea site (Michlovic and Schneider 1993), SLW may have continued to be made into the protocontact period, which is suggested to be from A.D. 1650-1850 in this region (Schneider 1982:125).

In fact, much of the Plains Woodland pottery in the eastern part of North Dakota is SLW (Fred Schneider, personal communication, 1999), and it is becoming recognized more often by researchers there. As Gregg et al. (1986:271) explained, “although hampered by small samples, late Plains Woodland pottery has exhibited greatest similarities to Blackduck and Sandy Lake ceramic wares that are characteristically represented by vessels found at sites along the eastern fringe of the Northeastern Plains and adjacent portions of the Eastern Woodlands.”

A survey of the middle Red River Valley in Norman County, Minnesota, which is adjacent to eastern North Dakota, has resulted in the discovery of at least 30 sites and most of the pottery collected from them is SLW (Breakey 1981:39; Michlovic 1982:67). A series of major surveys along the James River in North Dakota (e.g. Gregg et al. 1985, 1986; Kordecki et al. 1993; Picha and Gregg 1994; Schneider 1982; Wheeler 1963) also revealed many sites with pottery similar to SLW. There are likely many more examples of SLW that have been identified as something else. One problem that has interfered with the recognition of Sandy Lake sites in this region is that more than one nomenclature exists for this ware. The Lisbon Tool Impressed type of Lisbon Flared Rim ware (Wood 1963) was described before Cooper and Johnson (1964) defined SLW, however, almost all researchers use the former terminology (Michlovic and Swenson 1998:16); there are

also more SLW sites, particularly in adjacent Minnesota. To ease this confusion, Michlovic and Swenson (1998:16) proposed that the Lisbon Tool Impressed type be discarded (see Section 4.2.7.1).

Michlovic and Schneider (1988, 1993) reported that at the Shea site, which is located in North Dakota, the dominant ware is SLW and there are a large number of the similar Northeastern Plains Village ware vessels. They noted that some vessels have typical Oneota attributes such as strap handles and trailed decoration. Michlovic and Swenson (1998) reported that some other sites in eastern North Dakota, especially along the Red River, contain significant numbers of SLW vessels. Also, Michlovic and Swenson (1998) stated that some sites, particularly those near the James River, have fewer 'Woodland' pottery vessels and more Northeastern Plains Village ware pottery (Michlovic and Swenson 1998); thus, a tentative cultural boundary along the James River was suggested between Eastern Woodlands and more western Grasslands cultures (Figure 1.1). Descriptions of pottery similar to SLW are also found in the many cultural resource management reports such as Gregg et al. (1985, 1986). Thus, SLW probably extends much farther northwest into North Dakota, and occurs at more sites than once thought (Figure 2.1).

**4.1.2.2 Plains Village.** The Plains Village tradition is composed of the earlier Middle Missouri (Lehmer 1971) and Central Plains traditions, as well as the later Coalescent tradition, which is a blend of the latter two (Anfinson 1997:89). The Plains Village tradition is characterized by maize horticulture, small triangular projectile points, semi-permanent villages, and grit tempered, globular pottery (Anfinson 1997:144). The Central Plains tradition is based on sites from the central Grasslands of the U.S.A., and is not particularly relevant to a discussion of SLW. However, the Middle Missouri tradition is concentrated on the Missouri River in North and South Dakota but the sphere of influence of this cultural tradition is widespread in all directions (Schneider 1982). Hence, it is pertinent to this study. Also, many sites have both this pottery and SLW (e.g.

Hartlen 1996a, 1996b; Reid 1972) typically as contemporaneous entities. This tradition is divided into several variants that deal with time and proximity to the Middle Missouri subarea of North Dakota called the Initial Middle Missouri (A.D. 900-1300/1400), Extended Middle Missouri (A.D. 1100-1550) and Terminal Middle Missouri (A.D. 1550-1670) (Gibbon 1993:169-170). All three of these variants would have been contemporaneous with SLW, although there seems to be few similar attributes between that ware and Middle Missouri pottery (Michlovic 1987:54). Michlovic and Swenson (1998:12) described this pottery as being enormously varied. Only a few attributes of Middle Missouri pottery are similar to SLW, which are straight, S or incipient S rim profiles, check/simple stamped, or cord roughened exteriors (Ahler et al. 1991), and smoothed lips (Michlovic 1987:54). However, many of these attributes are also found on vessels of other affiliations.

**4.1.2.3 Mississippian.** Mississippian and Sandy Lake people were likely in contact with one another, given the close proximity of both kinds of sites in central Minnesota. Arthurs (1978:59) suggested that shell tempered SLW reflected the influence of Mississippians who extensively used this type of clay additive. These groups lived along the Mississippi River in Minnesota and Iowa from about A.D. 900-1300 (Anfinson 1997:144). They established themselves in permanent villages, made shell tempered pottery, and intensively cultivated maize or other crops (Anfinson 1997:144). The Mississippian archaeological tradition known as Oneota is found in southeastern Minnesota, most of Iowa, southeastern Wisconsin and other states to the south (Gibbon 1995). Sites of this affiliation date from about A.D. 900-1700 and have shell tempered pottery with high rims, as well as small triangular projectile points (Anfinson 1997:144). Of particular relevance to this study is that many sherds found on the Northeastern Grasslands have attributes of both SLW and Oneota pottery (Gibbon 1994, 1995; Michlovic and Swenson 1998; Ready 1979a). In particular, trailed SLW vessels with shell temper are suggested to represent this combination of traits (Gibbon 1994). Thus,

Oneota sites are contemporaneous with *Psinomani* ones; peoples of both sites made pottery with shell temper, and used similar triangular arrow points. Benn (1989) and Gibbon (1995) have both demonstrated that Oneota had a considerably larger sphere of influence, since a few Canadian sites show evidence of characteristic Oneota traits well out of the general distribution of this grouping (e.g. Flynn 1993; Taylor 1994a). Further exploration of the inferred relationships between SLW and Oneota is required.

#### **4.2 Similar Pottery**

Since there are so many different ways to categorize pottery, it is difficult to compare similar pottery which is classified in a different way. As alluded to previously, both the ware concept and the classification of SLW have been problematic. Michlovic and Swenson (1998:13) further explained that “the major problem with pottery classification has been small collections of fragmentary vessels.” There is added confusion when researchers change a pottery classification, do not publish revisions, revert to an older scheme (e.g. Mortlach aggregate to Mortlach phase) or name it something new (e.g. Red River ware - Northeastern Plains Village ware - Northeastern Plains Village ware group). This writer is not discounting that change is inevitable and useful but widespread areal separation often leads to some researchers not being aware of others innovations (particularly the disparity across the 49th Parallel). Vague descriptions of some types or wares has not been helpful either. Thus, the following section discusses the similarities between SLW and other pottery, while acknowledging the classification discrepancies.

There are a number of late precontact/early postcontact pottery types which are physically and temporally similar to SLW which may or may not be found together in sites, but are recovered in the same regions. Meyer and Hamilton (1994:125-126) noted that “a broader distribution of Sandy Lake ware to the west might be expected, and the fact that some Sandy Lake ceramics in this region may have been misidentified as Selkirk or Duck Bay supports the possibility.” Walde (1994:147) also agreed with this idea.

SLW vessels are similar to, or may have been incorrectly identified as pottery of: ‘undifferentiated Woodland ware’ (Cooper and Johnson 1964:474; Evans 1961:53; Lugenbeal 1978; Mayer-Oakes 1970; Wilford 1955:136), Blackduck ware (Evans 1961), Selkirk composite (Meyer and Hamilton 1994), Duck Bay complex of the Rainy River composite (Lenius and Olinyk 1990), Oneota phase (Michlovic and Schneider 1993), Northeastern Plains Village (Michlovic and Swenson 1998), Plains Village tradition (Lehmer 1971), Vickers focus (Nicholson 1990), Wascana ware/Mortlach aggregate or phase (Malainey 1991; Walde 1994), or Old Women’s phase (a.k.a. Late variant Saskatchewan Basin complex [Byrne 1973]). The co-occurrence of SLW with another pottery type indicates many possible scenarios: different traditions or influences were passed on by a single group; the vessel was traded; intermarriage occurred, so that someone with a variant cultural background joins a different group; or the site was occupied almost contemporaneously.

**4.2.1 ‘Undifferentiated Woodland’.** As Lugenbeal (1976:629) explained, “nearly all of the sites excavated by Wilford in northern Minnesota that contained Blackduck pottery also contained greater or lesser quantities of pottery that could not be related to either the Laurel or Blackduck ceramic traditions.” Wilford (1955:136) was the first author to refer to non-Laurel and non-Blackduck undifferentiated ‘Woodland’ pottery. Evans (1961:34, 53) followed this example by identifying part of his sample as ‘undifferentiated Woodland ware’. Cooper and Johnson (1964) dealt with this vague reference by actually categorizing the pottery, naming it SLW. Lugenbeal (1978:47) agreed that much of Evans’ (1961) ‘undifferentiated Woodland ware’ should be identified as SLW, although he suggested that some of this Minnesota pottery from mixed contexts may be an earlier form called Brainerd ware. Sherds of this latter ware are typically net impressed but they may be horizontally corded, albeit in a different manner than Blackduck vessels (Lugenbeal 1978). They are also much thicker, coil made, and not shell tempered. Lugenbeal (1978) claimed to be able to confidently discriminate among



Blackduck cord marked and Brainerd horizontally corded body sherds, but he could not differentiate between Blackduck and Sandy Lake cord marked (grit tempered). However, he concluded that “Nevertheless, considerable experience handling both kinds of body sherds led me to believe that a meaningful, if not perfect, sort could be made” (Lugenbeal 1978:50). This may have been optimistic, in view of Cooper and Johnson’s (1964:475) previous viewpoint that Blackduck and Sandy Lake Corded with grit temper could not be differentiated using only body sherds. In any case, the ‘undifferentiated Woodland ware’ was given the name SLW and it is found in sites usually stratigraphically above Blackduck and Brainerd ware.

**4.2.2 Blackduck, Kathio, and Clam River.** Wilford (1941) was the first person to identify Blackduck focus pottery, as part of the Headwaters Lakes aspect, since it was found near Blackduck Lake in Minnesota. Evans (1961), Lugenbeal (1976), and Carmichael (1977, 1981) are just a few researchers who have summarized and presented their own interpretations about this pottery. The many different classifications of Blackduck pottery will not be reviewed here. Rather, only relevant types and attributes will be discussed.

Although there is general agreement amongst archaeologists that Blackduck ware is earlier than SLW in Minnesota (as previously discussed in Chapter Three), there are several sites where their relationship is unknown. For example, there may not be clear stratigraphy at Boreal Forest sites (Reid 1988) where they were recovered or the soil may be cultivated in a Grasslands site where they are both found (e.g. Hartlen 1996a). Lenius and Olinyk (1990:82) proposed earlier dates than previously thought for Blackduck, from as early as A.D. 500 to not much beyond A.D. 1000. However, there could still be a short temporal overlap between SLW and Blackduck (Arthurs 1978:57). Rajnovich and Reid (1978:46) further explained why the contact or connection between SLW and Blackduck pottery needed to be examined more fully:

Evans' (1961) Nett Lake Plain, a Blackduck Ware, contains fabric-impressed vessels very similar to Alexander Fabric-impressed, and his corded vessels in this type appear to be identical to Sandy Lake Ware. Also, MacNeish's (1958) Cemetery Point Corded is practically identical to Sandy Lake Ware. We hypothesize the possibility that Nett Lake Plain actually represents a Selkirk component in Minnesota identical to Alexander Fabric-Imprinted, and that Cemetery Point Corded represents a Sandy Lake Ware component in Manitoba practically identical to Sandy Lake Ware.

Simultaneously, Arthurs (1978:62) suggested that Nett Lake, Washkish Plain and Corded varieties (Evans 1961), as well as Cemetery Point Corded type (MacNeish 1958) were similar to SLW. The latter type will be discussed in the next section. These comments clearly indicate the classification problems previously alluded to in this document. Evans (1961:48) stated that Nett Lake Plain only occurred at three sites: Mud Lake, Nett Lake, and Osufsen. While the 'undifferentiated Woodland ware' at these sites is now known to be SLW, there are some differences between it and Evans' (1961:48) description of Nett Lake Plain. For example, this type was noted to be thicker (averaging 9.6 mm) than other types and to be less carefully made (Evans 1961:48). Blackduck vessels are thickened at the lip, constricted at the neck, and have excurvate rims (Evans 1961:34), whereas SLW pots do not usually have these characteristics. Nett Lake Plain is probably closer to Alexander Fabric Imprinted than SLW, as Reid and Rajnovich (1978:46) suggested. Nett Lake Vertical Corded (Evans 1961:45) has a similar surface finish to SLW and is fairly plain. However, Blackduck ware has different characteristics. Thus, this author is not convinced that any of Evans' types should be reclassified as SLW.

There are several similarities between Blackduck and SLW vessels but these may only coincide on a single attribute basis. For example, the surface finish (listed as Smooth, Unsmoothed cord-marked, Unsmoothed non-cord-marked, Roughened-type unknown, Non-cord-marked-roughened), interior decoration of cord wrapped object impressions, and shallow circular punctates (Lugenbeal 1976:710) are similar to those of SLW. Both of these decorative motifs appear to have longevity in Woodland sites, since some vessels in Laurel (Lugenbeal 1976), Blackduck (Lugenbeal 1976:710), Selkirk

(particularly Clearwater Lake Punctate type), and northwestern Ontario as well as North Dakota SLW have one or both traits. Some Blackduck vessels are noted to have straight rims (Lugenbeal 1976). However, few if any shell tempered Blackduck sherds have been recovered (e.g. none in Lugenbeal 1976:745), and Blackduck vessels have thickened lips while SLW ones do not. Generally, SLW vessels are thinner. Since there are a number of similar traits, and SLW/Blackduck pottery is found within the same sites, there is a possibility that some SLW has been misidentified as Blackduck, particularly if the stratigraphy of the site is not clearly discernible.

Although Kathio series pottery is considered to be part of a series with Blackduck and Clam River focus pottery, there are few similarities between the former and SLW. The distribution of Kathio (A.D. 800-1200) and SLW overlap but SLW assemblages date later (Ready 1979b:103). Ready (1979b:103) summarized the distinctions between Blackduck, Kathio, and Clam River focus pottery as being essentially spatial.

**4.2.2.1 *Clam River Focus.*** McKern (1963) classified the Clam River focus on the basis of artifacts from two mounds in Burnett County, northwestern Wisconsin. Archaeological materials of this focus are primarily found in western Wisconsin and eastern Minnesota (George 1979) (Figure 1.5). Clam River focus pottery and SLW overlap in distribution although the latter extends much farther in all directions (Figure 1.1). George (1979:67) suggested a temporal range of about A.D. 700 to 1750 for the Clam River focus, which indicates a slightly earlier appearance than what is typically considered for SLW. Cooper and Johnson (1964:474) were the first researchers to mention that SLW was associated with artifacts of this focus. The Fickle site, one of the original ones used to define SLW, actually has much more Clam River pottery (Kolb 1988). According to Kolb (1988:92), there is a paucity of archaeological pottery information and problems exist with the current ware/type classifications in western Wisconsin. Van Dyke and Oerichbauer (1988) have re-evaluated this focus. There are several similarities between SLW and Clam River focus pottery. The previously

established decorative varieties of the latter are plain-combed, cord-stamped, and twisted-cord (George 1979). Kolb (1988:95-98) described several 'types' of Clam River focus with similarities to SLW: plain vessels with smoothed over cord roughened surface finishes; cord stamped vessels with cord wrapped tool impressions on the interior and no exterior decoration; and smoothed over cord roughened surfaces with interior vertical twisted cord impressions. However, some types are clearly not like SLW such as those with exterior decoration. Generally, Clam River pottery has constricted necks, more like Kathio or Blackduck pottery. It is typical that both pottery classifications are found with triangular and or side-notched projectile points. Thus, Clam River and Sandy Lake wares are sometimes associated in some Minnesota and Wisconsin sites.

**4.2.3 Selkirk.** MacNeish (1958:67, 162-170) was the first researcher to define the Selkirk 'focus', in which he recognized the Winnipeg Fabric-impressed ware split into Alexander Fabric-impressed, Sturgeon Falls Fabric-impressed, and Sturgeon Punctate types. As Meyer and Russell (1987:7) have noted, MacNeish (1958:162) actually included Cemetery Point Corded as a fourth type in the Winnipeg Fabric-impressed ware. This latter type had vertically oriented textile impressions rather than amorphous textile impressions. The author suggests that this type is SLW, as originally posed decades ago by Arthurs (1978:62) as well as Rajnovich and Reid (1978:46) (discussed below). Alexander Fabric-impressed vessels have the typical Selkirk attributes except without decoration, while the Sturgeon Falls Fabric-impressed type has lip decoration (Meyer and Russell 1987:8). The Sturgeon Punctate type has a characteristic rows of punctates. Although some archaeologists still refer to the terms used by MacNeish (1958), most assemblages are now assigned to different complexes of the Selkirk composite (e.g. Meyer 1998). Meyer and Russell (1987) provided a detailed summary of these changes.

Rajnovich (1983:53) explained the creation of the Winnipeg River complex within the Selkirk composite:

In southeastern Manitoba, Syms has suggested the Winnipeg River Complex based on MacNeish's (1958) ceramic types comprising Alexander Fabric Impressed, Sturgeon Falls Fabric Impressed and Sturgeon Punctate, clearly different from, yet related to, Clearwater Lake ceramics in the shared traits of shape, size and 'Winnipeg Fabric-Impressed' surface treatment.

The Sturgeon Punctate type is now called Clearwater Lake Punctate type of the same phase (Hlady 1971), although the initial term should have been given precedence (Meyer and Russell 1987:10). Other than Winnipeg River, several complexes have been defined, primarily based on pottery, for specific regions where these artifacts are found: Clearwater Lake and Grass River (Hlady 1971), Kame Hills (Dickson 1980), Pehonan (Meyer 1981, 1984), Kisis (Paquin 1995), and possibly Keskatchewan (Gibson 1998; but see Meyer 1998:75).

Several researchers have noted that the Cemetery Point Corded type, which was classified by MacNeish (1958:162) under the Manitoba Corded ware, was similar to SLW in some northwestern Ontario sites (Arthurs 1978:62; Rajnovich and Reid 1978:46; Reid and Rajnovich 1980:81). This type was described as having the following characteristics: usually no decoration except for some cord wrapped object impressions or notches on the lip; cord marking on the lip and rim; straight to slightly outflaring lips which are not thickened; and grit temper (MacNeish 1958:162). These attributes are very similar to those of SLW. MacNeish (1958:162) subsumed the Cemetery Point Corded type within Manitoba Corded ware even though it rarely occurred in the Manitoba focus but it was common in the Selkirk focus. Also, it was quite different from the other types of that ware and was heavily influenced by concepts involved in making Selkirk pottery (MacNeish 1958:162). He (MacNeish 1958:74) also suggested that it resembled Vickers' (1945) Pelican Lake foci pottery (now Vickers focus) and sherds from the upper level at the Mortlach site in Saskatchewan (see Chapter Five). Hence, Cemetery Point Corded is similar enough to be reassigned to SLW, since this term is used more often

than MacNeish's (1958) classification, although it should have been given precedence by Cooper and Johnson (1964).

Rajnovich (1983:i) stated that the Spruce Point site "is a single component among a plethora of multi-component sites with collapsed stratigraphy which characterize the major portion of the Lake of the Woods prehistoric record." However, one Laurel vessel, several Blackduck pots, and four SLW vessels were identified at the site. The author suggests that even more of those identified as Selkirk may have been SLW, since there were at least five vessels with the characteristic profile of the latter ware along with other appropriate attributes (i.e. Rajnovich 1983:119). She identified Selkirk house structures in this site similar to Laurel and Cree examples, which indicated the longevity of the Cree in this region (Rajnovich 1983). Reid (1984:39) suggested that, on the basis of the Long Sault and Lady Rapids sites, that Sandy Lake people in northern Minnesota probably had a long interaction with Blackduck and Selkirk peoples over several hundred years.

Michlovic (1987:53) stated that Selkirk and SLW are similar in age as well as appearance, with the distinguishing traits being differences in the manufacturing process or degree of rim excurvature. He commented that these similarities were indicative of broadly shared stylistic preferences (Michlovic 1987:53). Pastershank (1989:47) noted one "possible Sandy Lake derivative" found at the Neebin site on Lake of the Woods, northwestern Ontario. The only difference between this rim and other SLW rims in this region is that this specimen had a more flared profile, that she suggested was characteristic of Selkirk (Pastershank 1989:47). Meyer and Hamilton (1994) suggested that some southern Selkirk pottery may be misidentified as SLW or vice versa. For example, of the originally identified Selkirk pottery from the Wanipigow Lake site (Saylor 1978a:53), much of the "late Selkirk ware" has since been reclassified as SLW (Meyer and Hamilton 1994; Participants 1987) (see Chapter 5). One researcher even classified Sandy Lake as a type of Selkirk pottery (Spiedel 1989:39). Meyer and Hamilton (1994:124) explained that "it is possible that these similarities are the result of

contact and attribute borrowing, but the idea that there may be a cultural relationship between Sandy Lake and Selkirk must also be considered.” These wares are generally similar (especially textile impressed SLW and syncretic vessels), and the time frames and distributions overlap (Meyer and Hamilton 1994).

Arthurs (1986:199) observed that some of the textile impressed ‘Selkirk’ pottery from the Long Sault site has straight rim profiles and interior lip notching similar to SLW (although he did classify seven other vessels under this ware). He (Arthurs 1986:199) also noted that a rim with interior cord wrapped object impressions at the postcontact Rushing River site (Reid and MacLeod 1980:136) might be SLW. Arthurs (1986:205) also noted that a rim reported by Riddle (1980:168) from a site near the Albany River had textile impressions and interior edge lip notching. Presumably, this notation implied that it might be SLW. Thus, some of the earlier reports of Late Woodland Ontario pottery samples may not have classified a given specimen as SLW, even though the attributes would be applicable. It is possible that more pottery identified as Selkirk in Ontario and Manitoba may actually be SLW (e.g. Wanipigow Lake site). Perhaps, the Sandy Lake people(s) who moved into Ontario and Manitoba changed their technology from paddle and anvil to textile bag manufacturing after interacting with Selkirk groups, who used this method (see Section 2.3.7). They evidently maintained the traditional vessel shape and characteristics of SLW but probably developed their own textile bag innovations. This idea suggests an earlier Cree/Siouan alliance than previously thought, since the Cree or Algonquians (a.k.a. Algonkians) were likely successors to people of the Selkirk culture and the Assiniboine are thought to represent a continuation of the cultural groups who produced *Psinomani* material in Canada.

Arthurs (1986:264) presented a few interesting ideas dealing with the similarities between Selkirk and SLW in northwestern Ontario:

A small number of Sandy Lake rims from the Boundary Waters and Lake of the Woods area (including one vessel from the Long Sault site), share certain attributes with Selkirk ceramics. Most notable are the few Sandy

Lake vessels with fabric impressed surfaces. These artifacts may reflect a convergence between the two ceramic complexes, similar to that proposed by Rajnovich and Reid [1978] between Selkirk and Blackduck. If this can be interpreted as the sharing of ceramic information between two cultural groups in co-habitation, a good argument can be made to suggest that these sherds are tangible expressions of the Assiniboine-Cree alliance of the late 17th century (Ray 1974:12, 18).

It seems apparent that people who made SLW and southern Selkirk were likely cohabiting sites, since there is so much evidence to indicate this idea. Although many of these sites in the Boreal Forest lack stratigraphy (e.g. Reid 1988), there seem to be too many similarities to discount. Syncretic vessels, co-occurrence of pottery in some sites, similar time frames, and areal overlap provide evidence that these groups had some kind of relationship.

In summary, the Cemetery Point Corded type, which was originally categorized as part of the Manitoba focus (but vaguely linked to the Selkirk focus in MacNeish 1958), is so comparable to SLW that this type should be dropped. Northern Selkirk complexes (Pehonan, Kame Hills, Kisis, Kescatchewan) are not very similar to SLW. There are some similarities between SLW and southern Selkirk pottery, such as the Clearwater Lake complex and some types in the Winnipeg River complex; however, they are not so alike as to lose their own distinctiveness. Alexander Fabric-impressed is akin to plain SLW but differs in rim form and textile impressed surface finish. The Clearwater Lake Punctate type, with a single row of punctates, is comparable to SLW in Ontario. Given that all late precontact pottery types in the larger region where SLW is found have similarities (as discussed in this chapter), there was likely a great deal of interaction amongst various peoples.

**4.2.4 Ash Rapids Corded.** The distinctiveness of Ash Rapids Corded, from sites around the Lake of the Woods-Rainy Lake area in northwestern Ontario, was proposed by Reid and Rajnovich (1980). Since calling this pottery a type or ware was problematic, they decided not to assign it to a category (Reid and Rajnovich 1980:84). One radiocarbon sample was processed from the type site and assessed at an uncalibrated date



of A.D. 1280±125 (Reid and Rajnovich 1980:69). They presented information about Ash Rapids Corded and five other wares/types with cord roughened surface finishes including SLW (Reid and Rajnovich 1980:53). The author suggests that there is very little difference between these two classifications as explained below.

Although Reid and Rajnovich (1980:81) noted that Ash Rapids Corded has at least eight attributes in common with this ware, they noted four differences: 1)Sandy Lake necks are thicker (Reid and Rajnovich 1980:81); 2)SLW rims are higher (Michlovic 1987:53; Reid and Rajnovich 1980:81); 3)they possess distinctive scalloped interior lip impressions (Reid and Rajnovich 1980:81); and 4)SLW is dated to late precontact and early postcontact sites (Michlovic 1987:53; Reid and Rajnovich 1980:81). While SLW has marginally thicker necks (5.8 mm mean in Arthurs 1978:63) than Ash Rapids Corded (5.0 mm mean, standard deviation 1.0 mm), the difference is 0.8 mm, using the mean measurements (Reid and Rajnovich 1980:71, 80). This variance is hardly negligible. The rim height of SLW vessels is approximately 30.0-35.0 mm (D. Arthurs, personal communication, in Reid and Rajnovich 1980:80), while Ash Rapids Corded vessels range from 21.0-35.0 mm with a mean of 24.9 mm and standard deviation of 3.4 mm (Reid and Rajnovich 1980:71). While the rims tend to be slightly higher, some measurements overlap, and several fall within the range of Ash Rapids Corded (e.g. SLW Vessel #2 measured 23.0 mm in Birk 1977b:11) The third reason for creating the designation Ash Rapids Corded is that these vessels do not have “distinctive tool impressions which create scallops on some interior lips” (Reid and Rajnovich 1980:81). However, the authors even noted that “Sandy Lake Corded (Un-notched Variant)” could be plain or have occasional punctates (Reid and Rajnovich 1980:80), thus negating the necessity to have interior lip scalloped decoration. Other forms of decoration are also commonly used on SLW (e.g. Section 2.3.8). At the time that their publication was made, the single date for Ash Rapids Corded was conveyed by Reid and Rajnovich (1980:69) to be earlier than dated components with SLW. More recent evidence suggests that there are several Sandy

Lake sites dating to this time and even earlier dates have been determined (e.g. Michlovic 1987:53; Snortland-Coles 1985:5.15). One date from a Sandy Lake site (DjKa-5) in the same area, and previously reported by Reid (in Rajnovich and Reid 1978:48), was assessed at an uncalibrated time frame of A.D. 1230±125 (no lab number). Thus, the dated context of a northwestern Ontario Sandy Lake component is almost identical to one from the Ash Rapids West site. However, there are only three dated SLW sites from a multitude in that area (Table 3.3), and only one date associated with Ash Rapids Corded. Thus, there is only one attribute, which is a slightly higher rim on some SLW vessels, that differentiates it from Ash Rapids Corded (Michlovic 1987:53). There are examples of shorter rimmed vessels of this ware, such as from the Shea site (Michlovic and Schneider 1988:Plate 13, 1993:130). As Michlovic (1987:53) explained for the similarities between some Snyder Dam vessels and SLW, “if these two ceramic collections do not belong to the same tradition of pottery manufacture, they are very close.” Another researcher noted problems in distinguishing between the two kinds of pottery, since similar descriptions of SLW and Ash Rapids Corded “caused for some confusion when the analysis of the Nestor Falls vessels had to rely on small sized rim sherds and a few other associated sherds” (Halverson 1992:56). While the author did not view all of the Ash Rapids Corded vessels, the attributes and associated information suggest that the term Ash Rapids Corded could be dropped, as there is so little difference between it and SLW. This categorization would not negate the research completed by Reid and Rajnovich (1980) but rather, they documented more SLW in northwestern Ontario.

The Ash Rapids Corded group of vessels from the Lake of the Woods-Rainy Lake region could be an early form of SLW that represents several incursions into what is now Ontario from Minnesota (since the ware is dated earliest in that state and in eastern North Dakota). The very similar <sup>14</sup>C dates from DjKa-5 (Reid in Reid and Rajnovich 1978:48) and the Ash Rapids East and West sites, which were reported to have Sandy Lake, would also support this idea.

**4.2.5 Rainy River Composite.** Lenius and Olinyk (1990) revised the Late Woodland taxonomy after examining hundreds of vessels from many sites in the Rainy River region. They refined the Blackduck horizon suggesting that it emerged by at least A.D. 700, possibly as early as A.D. 500, and that it is not found in sites dating beyond A.D. 1000 (Lenius and Olinyk 1990:82). The Rainy River composite was suggested by Lenius and Olinyk (1990:83) to have been formed from a coalescence between the Blackduck and Laurel cultures. These two cultures co-existed in the Rainy River region from about A.D. 700-1000, after which they disappeared and the Rainy River Coalescent group emerged at around A.D. 1000-1100 (Lenius and Olinyk 1990:84). Following this cultural change, the Rainy River composite appeared and continued until about A.D. 1350, perhaps A.D. 1475, or a maximum of A.D. 1650 not based on <sup>14</sup>C dates (Lenius and Olinyk 1990:84). The regionally and temporally defined complexes, of which they had to share common pottery traits and perceived social, political, and religious activities, of this composite include Winnipeg River, Bird Lake, and Duck Bay (Lenius and Olinyk 1990:82). A significant number of vessels of at least one definitive type must be represented in the smaller mounds (as opposed to older, larger Laurel mounds) and at least one habitation site had to be present for a proposed complex to have been part of the Rainy River composite (Lenius and Olinyk 1990:82-83). Generally, Rainy River pottery has traits acquired from both Laurel and Blackduck wares according to Lenius and Olinyk (1990:83-83):

Ceramic traits inherited, in a general sense, from Blackduck include oblique and horizontal CWOI design elements, globular vessel form, and cord marked or textile impressed bodies (sic). Generalized ceramic traits inherited from the Laurel culture include stamped design elements, plain or smooth surface finish (Stoltman 1973:26), and decoration located on the shoulder/body (Zone 1) area of the vessel (sic).

Thus, the basis of the Rainy River composite has been explained as the blending of Laurel and Blackduck traits forming the Rainy River coalescent, which in turn led to that composite in this region at about A.D. 1100 and later. Lenius and Olinyk (1990:100)

noted the likelihood that continuing research would lead to the recognition of additional complexes in the Rainy River composite.

One problem with Lenius and Olinyk's (1990) classification scheme is that they noted the presence of SLW in the Rainy River region but they do not indicate how it related to the rest of the Western Woodland Algonkian configuration. This omission is likely due to the prevailing belief that SLW was made by Siouans. However, the fact that it is found in the Rainy River region (e.g. Arthurs 1986) and is very similar to some Duck Bay types has not been dealt with by them.

**4.2.5.1 Duck Bay Ware.** Duck Bay ware is part of the Duck Bay complex in the Rainy River composite, which was previously discussed. Although Bird Lake and Winnipeg River pottery types are clearly distinctive from SLW in vessel form, decoration, and surface finish, some types of Duck Bay ware are very similar to SLW. The Duck Bay complex is found in northern Minnesota (Hanna 1982), across Manitoba, and into east central Saskatchewan (Meyer 1998). A couple of isolated finds in north central Ontario were noted by Hanna (1982:7). One of the most distinctive aspects of this complex is that while Duck Bay ware occurs in small percentages (between five and 20 per cent, although with less the farther away from the Aschkibokahn site) at numerous sites, it only occurs in the majority (Duck Bay Stamp was identified as 73 per cent of 410 total vessels) at the Aschkibokahn site in west central Manitoba (Hanna 1982:3, 6).

Duck Bay ware has been studied and described by a number of researchers (Gibson 1976; Hanna 1982, 1984, 1992; Snortland-Coles 1979) and by Leigh Syms in an unpublished manuscript. Although changes have been suggested, originally four types were defined for Duck Bay ware: Stamp (Punctate), Notched Lip, Undecorated, and Decorated Lip (Lenius and Olinyk 1990:87-90). It was labelled as a separate ware from Blackduck and Selkirk pottery since its decorative attributes are distinct (Hanna 1984:116). Most vessels subsumed under the Duck Bay Stamp type are readily distinguishable from SLW by their ornate stamped decorations and vessel shape.

However, the three types Notched Lip, Undecorated, and Decorated Lip of Duck Bay ware parallel the two plain and notched variants ascribed to SLW as well as being known to have decoration on the lip (Gibbon 1987:26). There are definite similarities between the two wares as indicated in Table 4.2. Also, Lenius and Olinyk (1990:88) noted that ‘in fact, all eleven Duck Bay Complex vessels identified from the Rainy River mounds belong to this [Stamp] type.’ It would seem logical that the other types may not belong in the Duck Bay complex, since it was stipulated by them that a pottery type had to be represented in the mounds from that region in order to be included in the complex (Lenius and Olinyk 1990:82). Thus, the following discussion about Duck Bay is relevant to this thesis.

Although Duck Bay ware is centred around Lake Winnipegosis at the Aschikibokahn site, it extends as far north as the lower Saskatchewan Valley, west into east central Saskatchewan, and some pots are found as far away as the Rainy River mounds (Meyer 1998:50). Sandy Lake ware does not extend quite as far northwest as Duck Bay ware but it is found farther southeast. One Duck Bay Stamp rim sherd and one Sandy Lake Smooth tool impressed sherd (Walker 1996a:104, 1996b:26) was recovered at the Heron site (Taylor 1992) in southwestern Manitoba, which is somewhat outside of the typical range for Duck Bay. Meyer and Hamilton (1994:125-126) noted that some SLW in this region may have been misidentified as Duck Bay ware.

As usual, when discussing Late Woodland pottery, opinions about Duck Bay ware have differed greatly. Lenius and Olinyk (1990) proposed the Western Woodland Algonkian Configuration, which consists of the previously defined Selkirk composite (Meyer and Hamilton 1994) and their definition of the Rainy River composite. The latter

**Table 4.2. Comparison of Duck Bay and Sandy Lake ware attributes.**

Attribute	Duck Bay Ware <sup>1</sup>	Sandy Lake Ware <sup>2</sup>
Profile	globular	globular
Rim Shape	straight, S, incipient S	vertical to near vertical, occasionally incurved, incipient S
Lip Shape	no thickening (0.95 times the neck thickness), flattened	no thickening, flattened
Neck Interior Shape	minimal thickening, obvious interior edge	horizontal rib-like thickening
Shoulder Shape	rounded or angular	rounded or rarely angular
Paste	laminated, compact, sometimes exfoliated; see Hanna's work	laminated, compact, sometimes exfoliated
Temper	grit, low percentage organic	very fine shell or grit
Manufacture	textile bag	textile bag or paddle and anvil
Decoration Area	none (Undecorated type), interior rim 'edge', (Notched Lip), rim exterior (Stamp, Decorated), neck exterior (Stamp, Decorated)	none (plain variant), upper interior rim (notched), interior neck, interior shoulder, lip, rarely exterior
Decoration Type	plain, round or sharp edged tool, cord wrapped object impressed	plain, round, oval, or sharp edged tool, cord wrapped object, triangular tool
Decoration Motif	plain, notched, paired notches, rows of stamps (ovoid, crescentic),	plain, notched, paired notches, clustered notches with intervening criss-cross incisions, vertical crimped, right oblique crimping, exterior bulges (like bosses), continuous triangles with apex down
Decoration Orientation	vertical	vertical, right oblique, left oblique
Exterior Surface Finish	smoothed, vertical cord marking, parallel vertical textile impressed, smoothed over corded	smooth, vertical cord marking, parallel vertical textile impressed, smoothed over corded (obliterated),
Thickness (rim and body)	4.5-8.5 mm (mean=6.5 mm)	3.0-7.0 mm (mean=5.0 mm)
Hardness	?	2.0-3.0 on Moh's scale
Mound recoveries	Only Stamp type	very limited numbers of mortuary vessels

<sup>1</sup>Duck Bay ware details compiled from Hanna (1984) and Lenius and Olinyk (1990).

<sup>2</sup>Sandy Lake ware information compiled from Cooper and Johnson (1964), Gibbon (1987), Justin and Schuster (1994), and Peterson (1986).

resulted from a reappraisal of late Blackduck and some Selkirk pottery (Lenius and Olinyk 1990), and partially overlaps with SLW in areal extent as well as time frame. Lenius and Olinyk (1990:84) divided this composite into the Duck Bay (A.D. 1100-1350, perhaps until 1650), Bird Lake (A.D. 1100-1350), and Winnipeg River (A.D. 1350-mid/late 1600s) complexes, arguing that an earlier Laurel-Blackduck coalescence (A.D. 1000-1100) resulted in their occurrences.

Only two acceptable  $^{14}\text{C}$  dates, which are likely not calibrated, are associated with Duck Bay from the Aschkibokahn site: “A.D. 1255±175 (GX-5516) and A.D. 1180±110 (GX-5517)” (Hanna 1982:5). There is a general overlap between dated components of SLW (A.D. 1000-1750 in Birk 1979:175) and Duck Bay (A.D. 1000 to 1500 in Meyer and Hamilton 1994); however, more dates are required to have a more accurate temporal estimate for both wares.

Another revision by Lenius and Olinyk (1990:90) was that Duck Bay Undecorated, which was formulated by Leigh Syms in an unpublished manuscript, be subsumed into the already described Alexander Fabric Impressed type (MacNeish 1958:166-7) except for a few shallow S-rim undecorated vessels. Unfortunately, they did not indicate how these vessels would then be categorized (Lenius and Olinyk 1990:90). Meyer (1998:60) noted that “undecorated vessels such as these are present in small numbers in most regional assemblages of this time period, whether Rainy River, Mortlach or Vickers (e.g. Hartlen 1997:72).” Also, SLW is found as a plain variant across much of its extent, with the exception of northwestern Ontario (Arthurs 1978). The author advocates the idea that these undecorated vessels are Sandy Lake Corded plain, which would account for both straight and a few incipient S-rim vessels, since both of these rim forms are acceptable forms of the ware (Cooper and Johnson 1964; Peterson 1986).

Similarly, it was suggested that Snortland-Coles’ (1979) Duck Bay Decorated Lip type be dropped and reclassified as the original Sturgeon Falls Fabric Impressed type in MacNeish’s (1958:167) Selkirk focus (Lenius and Olinyk 1990:90). The two extant types of this ware were then Duck Bay Stamp and Duck Bay Notched Lip (Lenius and Olinyk 1990:90). As Meyer (1998:50) pointed out, “it appears that most of the vessels which are described as Alexander Fabric-impressed and Sturgeon Falls Fabric-impressed (i.e. as Winnipeg Fabric-impressed ware) in Duck Bay complex assemblages have paste, vessel profile and exterior finishes which are the same as those of the vessels identified as Duck Bay ware (Duck Bay Stamp and Duck Bay Notched Lip type vessels).” Thus,

Meyer (1998:50) chose to re-assign these Alexander Fabric-impressed and Sturgeon Falls Fabric-impressed type vessels to Duck Bay ware and retained the four original types of Duck Bay when describing the Goldsworthy site collection: 1)Duck Bay Stamp, 2)Duck Bay Notched Lip, 3)Duck Bay Decorated, and 4)Duck Bay Undecorated.

Mayer-Oakes (1967:367; 1970) was the first person to suggest that some sherds from central Manitoba were similar to SLW or that it was present in that part of the province. He described the pottery surface collected during the Grand Rapids Reservoir Survey at Site No. GRS-1 as being similar to this ware:

The preponderance of the punctate pattern suggests the type *Sturgeon Punctate* defined by MacNeish (1958, p. 169); the combination with cord-wrapped stick impressions implies some relationship to Blackduck types, but thin straight rim and overall thinness are reminiscent of the Sandy Lake wares (Cooper and Johnson 1964). These ceramic materials seem quite distinctive. They probably correlate with the chipped stone material as a very late prehistoric unit. The crockery sherd may be adventitious from a later casual occupations, or may in fact suggest an overlapping in time with earliest European contact (Mayer-Oakes 1970:11, 14; emphasis his).

It is interesting that Mayer-Oakes (1970) assessed this pottery as being very late precontact in age, since some SLW components in Canadian sites are also known to date quite late (e.g. Arthurs 1986). Mayer-Oakes (1970) did not identify these sherds as SLW but noticed similarities between the straight rim and overall thinness of these vessels. Judging by the photographs, these sherds would now probably be categorized as Bird Lake or Duck Bay Stamp. However, he indicated early on in the archaeological study of the Grand Rapids region that some pottery from there was similar to SLW.

Three types of Duck Bay ware are descriptively similar to SLW and they parallel the plain and notched variants:

The Duck Bay Notched Lip Type is defined by the presence of *notches found across the interior edge of the lip of the vessel* and remains consistent with Syms' (n.d.) original definition. These notches are often similar in appearance to a stamp impression [sic] but may also be formed by the impression of an unwrapped rod or a cord-wrapped object (CWOI) [sic]. Notches on Duck Bay vessels are applied at an angle, resulting in an impression which is close to parallel with the lip surface. The notches on Duck Bay ceramics can sometimes be mistaken for lip surface rather than lip edge decoration. As these notches form the only decoration on this



type, the exterior and interior of the vessels are undecorated (Lenius and Olinyk 1990:88; emphasis theirs).

Sandy Lake ware is characterized by inner rim notching using cord wrapped object and round or sharp edged tool impressions (Cooper and Johnson 1964:475) along with other types of notching (see Section 2.3.8). Thus, the Duck Bay Notched Lip type bears the same kinds of tool impressions as SLW. Cooper and Johnson (1964:475) described the decorative area on their notched variant vessels as occurring on top of the lip and consisting “of a tool-impressed notch that extends from a point approximately 1 cm. below the lip to the inner edge of the lip.” However, tool impressions are also found on the lip corner of SLW, similar to that which occurs on Duck Bay Notched Lip type, if it is important to be that specific (i.e. Was it an important issue to the potters?). Michlovic (1987:53) explained that “While it is important to describe local expressions of regional wares in detail, it is equally necessary to recognize that minor variations within a ware may not have great anthropological significance.” Duck Bay Notched Lip is similar to SLW notched variant, but Duck Bay Undecorated and SLW plain are also alike (Table 4.2). Some SLW vessels have crenulated lip decoration and Hanna (1984:5) noted that occasional instances of pie-shell crimping and fluting are found on Duck Bay ware. Also, SLW sometimes has decoration occurring on the lip which parallels Duck Bay Decorated Lip type.

In terms of general similarities, both SLW and Duck Bay ware (Table 4.2) are globular. Surface finishes may be smooth, ‘cord-marked’, or the most commonly found vertically aligned textile impressed (Lenius and Olinyk 1990:87). Hanna (1984:115) described Duck Bay ware as having a fine, vertically oriented sprang surface finish. According to Lenius and Olinyk (1990:87), a few Duck Bay vessels have the typical Winnipeg Fabric Impressed ware surface finish, which is essentially textile impressed with some parts of pots being obliterated (smoothed over); however, Meyer (1998:50) pointed out that these vessels appear to have all the other characteristics of the Duck Bay

ware and should thus remain in it. This obliterated surface finish is also present on some SLW vessels (a.k.a. smoothed over cord marked). Both wares are thin and may have S, incipient S-shaped, or straight rims (Peterson 1986; Snortland-Coles 1979:28). It is interesting that Duck Bay Notched Lip had the lowest mouth flare angle, other than Blackduck Bossed, in Lenius and Olinyk's (1990:104) study. In other words, they are quite straight in rim profile like typical SLW.

Lenius and Olinyk (1990:87) noted that the vessel form of Duck Bay ware differs from others in the Rainy River composite. Some Duck Bay ware necks have "a distinct edge to the interior" (Lenius and Olinyk 1990:87) and SLW has a similar feature (rib like appearance in Cooper and Johnson 1964). Duck Bay is grit tempered as are the vast majority of northern SLW (Arthurs 1978; Hanna 1982). Both wares also have examples of undecorated vessels: Duck Bay Undecorated (Lenius and Olinyk 1990:87) and Sandy Lake plain variant (Cooper and Johnson 1964). In addition, Duck Bay Decorated Lip and SLW with decorated lip tops are parallel types.

A few differences between SLW and Duck Bay ware do exist. Some shoulders of the latter ware have "a distinct edge on the exterior" (Lenius and Olinyk 1990:87), unlike SLW vessels which tend to have rounded necks and shoulders (if present at all). Justin and Schuster (1994) reported a SLW vessel with an angular shoulder but it was considered to be quite unusual. Duck Bay vessels seldom have thickened necks like some SLW but instead necks and lips are not thickened or thinned to any degree (Lenius and Olinyk 1990:87). Peterson (1986) reported that an even thickness between the neck and rim of SLW vessels in her sample was the most common category. Some Duck Bay ware vessels have angular necks, while SLW usually does not. However, there have been few Duck Bay ware pots reconstructed to see if this angularity applies to all types or if it applies to many of the pots at all. The majority of Duck Bay ware occurs as the Stamp type (Hanna 1982), so it would be interesting to determine if types conform to the exterior surface finish.

Lenius and Olinyk (1990:84) have observed that “In the northwest the Duck Bay Complex is likely replaced by plains-related groups, while as yet undefined complexes of the Rainy River Composite in northern Minnesota are replaced by Sandy Lake.” Perhaps these undefined complexes actually represent people who made SLW, rather than them replacing an ‘unknown’ archaeological manifestation of the Rainy River composite. As manifested by ‘Duck Bay Notched Lip’, ‘Duck Bay Undecorated’, and ‘Duck Bay Decorated Lip’ types, people left behind the material culture classified as the Rainy River composite in certain parts of Minnesota, Manitoba, and Saskatchewan (circa. A.D. 1100). Apparently, they stayed in Minnesota, Ontario, and southern Manitoba after A.D. 1500 and until after European contact, as indicated by late dates associated with components containing SLW. The author proposes that Duck Bay Stamp type remain in the Duck Bay complex of the Rainy River composite as part of the Western Woodland Algonkian configuration described by Lenius and Olinyk (1990). However, the other three types, Notched Lip, Undecorated, and Decorated Lip which were originally included with Duck Bay ware are likely SLW. The areal distribution of the two wares is similar, as is the temporal range.

It was determined that the established attributes of SLW are very similar to Duck Bay Notched Lip, Duck Bay Undecorated, and Duck Bay Decorated Lip types. Using Lenius and Olinyk’s (1990:84) summary of dates for Duck Bay complex, the two wares were contemporaneous from about A.D. 1100-1650 although the few dates from Aschkibokahn indicate a slightly earlier appearance. The areal distribution is similar except SLW extended farther southwest in the U.S.A. and Duck Bay ware is recovered farther northwest in Canada. These conclusions suggest that Sandy Lake notched and plain variants (Cooper and Johnson 1964), which take precedence in the literature, are found in some sites of the Duck Bay complex. Duck Bay Stamp, the most common type of Duck Bay ware, remains classified as it was previously.

**4.2.6 Oneota.** The Mississippian Oneota tradition was first defined by Orr ([1914] in Anfinson 1997:90) for sites in northern Iowa. Much research has focussed on the Oneota phase, with some conferences being devoted solely to the subject (e.g. Iowa City in 1994). These sites are found from central Missouri through Minnesota to the James River Valley in the Dakotas (Anfinson 1997:90). General characteristics of Oneota components include: cemetery burials, triangular projectile points, deep storage pits, scapula hoes, relatively small village sites, bison and maize subsistence evidence, and distinctive shell tempered, globular, flared pottery with trailed decoration (Gibbon 1995:182). Orr phase Oneota is particularly relevant to this study since it has been found in Bradbury phase sites which also contain SLW (Birk and Johnson 1992:209). This phase of Oneota has a very large areal extent, from Lake Michigan to the Red River and central Minnesota south to Missouri (Anfinson 1979b:157). Ogechie series is referred to as a localized (in central Minnesota) version of Orr phase Oneota, which is found in several sites with SLW (Birk and Johnson 1992:209; Ready 1979a:143). The Ogechie series is described as a Woodland and Mississippian blend of traits, characterized by its pottery, and inferred wild rice subsistence practices (Ready 1979a:143). The vessels are smooth and rounded globular with straight/everted rims, flattened lips, constricted necks, loop handles, and trailed/lip notched decoration (Ready 1979a:143). From this list, it is apparent that some attributes are similar to those of SLW in central Minnesota, which is not surprising since many sites have both wares.

Cooper and Johnson (1964:478), when classifying SLW, noted the presence of a few trailed line 'Mississippian' sherds associated with this ware at the Battle Island site. Breakey (1981) also noted trailed line lip decoration on one of the SLW sherds from her Red River Valley sample. Gibbon (1994:146) recently noted that "nearly all Psinomani ceramic assemblages across central Minnesota contain small amounts of 'northern' Oneota pottery (Anfinson 1979a:144; Ready 1979a) or Red River ware (or Northeastern Plains ware) in the Red River Valley region (Michlovic 1987; Michlovic and Schneider

1988).” Vessels which have both typical SLW attributes and rather distinctive Oneota attributes, such as trailed line decoration or handles, evidently reflect the exchange of information between different people (Peterson 1986). These vessels are sometimes referred to as ‘Sandy-ota’ (Peterson 1986:Plate I). It was noted by Peterson (1986) that the presence of interior trailed lined decoration on some SLW pottery may be indicative of temporal or regional variation in that ware in that the Oneota trait of trailing could have been borrowed by those making SLW vessels.

It is now perceived that the sphere of influence of the Oneota phase, with the northern sites being more pertinent to this study, extends even farther (Benn 1989; Gibbon 1994, 1995) than previously thought. Oneota-like vessels and some of the typical stylistic motifs are present in northern Minnesota and on the Northeastern Grasslands (Gibbon 1995:182-183). Particularly relevant is the Duthie site (‘Duffy’ in Gibbon 1995:184; Taylor 1994a, 1996, 1997) which is in the study area and had the following recoveries with Oneota-like attributes: smooth and trailed vessels; chevron patterns on smooth sherds; one ‘eye’ motif on a few sherds which was suggested to be typical of Blue Earth phase Oneota (Nicholson and Burton-Coe 1992:8); a single, partially reconstructed, burnished vessel with five handles (Figure 4.2); and a Catlinite pipe with incised quartering. The author (Taylor 1994a, 1996a, 1997) previously suggested that the Duthie site assemblage had SLW, Northeastern Plains village, and Initial Middle Missouri traits rather than Oneota, largely due to their closer proximity. The first and possibly second of these manifestations was likely influenced by the Oneota, since sites containing both of these wares often have a few Oneota sherds.

Another site with Oneota-like and SLW pottery is Lockport on the Red River, which is multi-component with a horticultural layer (*circa* A.D. 1400) with bison scapula hoes, deep storage pits, and maize kernels (Flynn 1993; Gibbon 1995:187). Flynn (1993) referred to this as a locally developed ware and also noted the presence of Rainy River composite, Blackduck, and Laurel pottery. Similar in time frame is the Shea site in

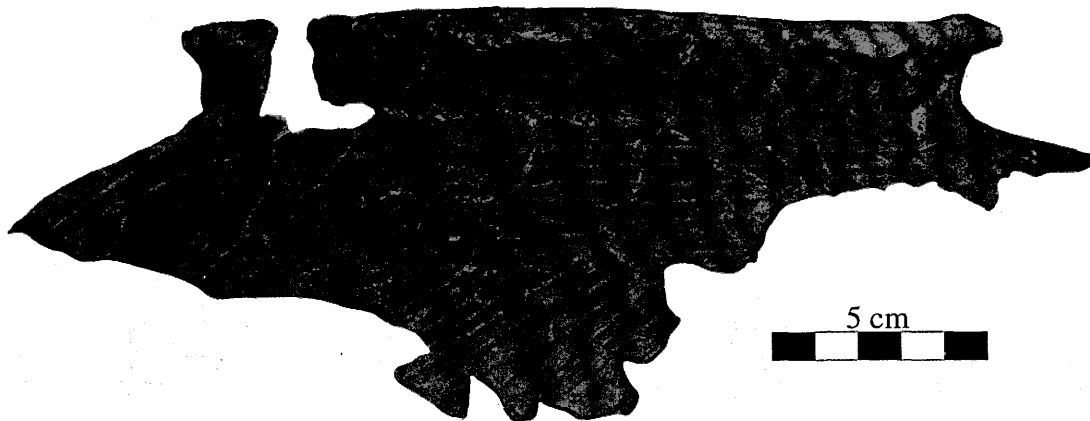


Figure 4.2. Partially reconstructed vessel from the Duthie site in southwestern Manitoba (reconstruction mainly by George Hartlen and some parts by the author). Note the vertically attached handles, round tool impressions on the exterior lip/rim corner, and horizontal over right oblique trailed lines on this vessel. It has a burnished surface finish.

North Dakota which has 41 SLW vessels, 33 Owego pots, four likely Oneota vessels and several motifs attributed to that tradition (Michlovic and Schneider 1993:129, 132). It is a fortified Northeastern Plains Village which is dated to about A.D. 1450 (Michlovic and Schneider 1993).

Wilford (1941:248) suggested that the Oneota 'aspect' could be related to the Chiwere Siouan group and this idea has persisted. However, Anfinson (1997:90) specified that the Oneota tradition might be related to the following Siouan peoples: Kansa, Osage, Winnebago, Missouri, Oto, and Ioway. SLW was also likely made by proto-Siouan peoples (see Section 3.9), so this may explain why both kinds of pottery have similar attributes, they are found together in many sites, and syncretic vessels exist (see discussion to follow). As noted by Birk (1979:176), possible relationships between the makers of Sandy Lake and Ogechie series pottery have not been explored. Johnson's (1985) Bradbury phase dealt with this relationship in the context of late sites with these two kinds of pottery, French trade goods, and Orr phase Oneota.

**4.2.7 Northeastern Plains Village Ware Group.** In eastern North Dakota, most sites are classified as part of Northeastern Plains Village which are centred on the Devils Lake basin, along the Sheyenne, James, and Maple Rivers, as well as around Lake Traverse and Big Stone Lake on the Minnesota/South Dakota border (Anfinson 1997:119; Michlovic and Swenson 1998:11). Although the general time range for these sites is A.D. 950-1650, there are several protohistoric Northeastern Plains Villages (e.g. Gregg 1987; Michlovic and Schneider 1993; Wood 1971), and these often contain SLW. These sites often have fortifications around them and there is sometimes evidence of maize horticulture (e.g. Michlovic and Schneider 1993). Interestingly, almost all of these sites have pottery that is SLW or resembles it closely (e.g. Table 3.1). Perhaps the best explanation for Northeastern Plains Village sites is that they were occupied by both Plains Woodland people, such as those who made SLW, and the Plains Villagers to the west of them (discussed below).

The pottery in this grouping was originally introduced as Red River ware (Michlovic 1987; Michlovic and Schneider 1988), then changed to Northeastern Plains Village ware (Michlovic and Schneider 1993) and finally Northeastern Plains Village ware group (Michlovic and Swenson 1998). There does not seem to be a great deal of difference between SLW and some pottery of this group, although rolled lip versions are not usually known in SLW.

Michlovic and Swenson (1998) have attempted to simplify a confusing array of previously described wares from eastern North Dakota and adjacent locations. The pottery wares and types were originally named from the Schultz, Hintz, and Biesterfeldt sites in eastern North Dakota (Michlovic and Swenson 1998:13). Many of these descriptions are similar to SLW and it has been found in many of these sites (Table 3.3).

Michlovic and Swenson (1998:11) named the Northeastern Plains Village ware group dating from A.D. 950-1650. It is associated with village sites in which some horticulture is thought to have been part of the subsistence routine (Michlovic and Swenson 1998). This grouping includes the wares formerly included in the Stutsman focus (Wood 1963) called the Lisbon, Owego, and Buchanan wares with some modifications. Some of these sites also have SLW, Oneota, southern Minnesota Cambria, and Middle Missouri Village pottery. Syms' (1979b) Devils Lake-Sourisford pottery is seen to be related to the Northeastern Plains Village ware group (Michlovic and Swenson 1998:24). One Buchanan Flared Rim has shell temper (Wheeler 1963), while the undecorated pottery seems to resemble SLW.

**4.2.7.1 Lisbon Flared Rim Ware.** Wheeler (1963) proposed the Stutsman focus (now the Northeastern Plains Village complex) for some sites in the upper James River region of North Dakota. Although initially suggested as early postcontact sites, they are likely more culturally complex (Schneider 1982:130). One ware included in this focus is Lisbon Flared Rim which was named by Wood (1963). The importance of this ware is that one type has been reclassified as SLW by Michlovic and Swenson (1998:24).



Lisbon Flared Rim ware has straight to outcurved rims, flat lips, and grit temper (Michlovic and Swenson 1998:15). It has three types: Undecorated, Horizontally Incised, and the newly defined Rolled Lip (Michlovic and Swenson 1998:16). Michlovic and Swenson (1998:24) suggested that Lisbon Tool Impressed, which is smoothed over cord roughened and has tool impressions, be dropped as a term since it is virtually identical to SLW. Thus, it is reiterated here that Lisbon Tool Impressed be dropped from usage, since it is so close to the description of SLW.

**4.2.8 Vickers Focus.** The pertinence of discussing the Vickers focus is that SLW has been found in several of the site assemblages included in this designation (Nicholson 1991, 1994). Chris Vickers was an amateur archaeologist who investigated the Rock and Pelican Lake localities, amongst others, in southwestern Manitoba during the 1940s and 1950s. He named two 'village' cultures, the Rock Lake and Pelican Lake foci (Vickers 1949, 1950). Nicholson (1991:167) changed the name of the latter to Vickers focus since Pelican Lake is now often used to indicate a Middle Precontact projectile point type and phase/complex. He retained the Midwestern Taxonomic System term since these sites are spatially restricted and they had been designated by Vickers as a focus. Nicholson (1991:167) noted that in comparison to the Rock Lake focus, from the Avery site, assemblage:

Decoration of the Pelican Lake Focus ceramic assemblage from the Lowton site was more varied, with finger pinched nodes along the exterior lip edge, twisted cord impressions, tool impressions, and incising on the lip and neck area. Punctates were also present and two sherds displayed effigy tabs - possibly indicating quartering on the vessel lips. The body sherds indicated a globular shape with obliterated cord/fabric-marked exterior surfaces. Rim profiles varied from "S" profiles, through straight, to slightly flaring. Vickers noted that the Pelican Lake Focus ceramics and lithics were of outstanding quality. He estimated the dates of these groups at A.D. 1600-1650 and their origins to be northern Minnesota and Middle Missouri region, respectively (Vickers 1950[:14]).

Some of Vickers' ideas about this region have persisted, particularly that the Lowton site contained pottery similar to sites occupied by horticultural groups to the south. The Lowton site was proposed as the type site for the Vickers focus (Nicholson and Malainey

1995). However, it has been disturbed by repeated cultivation and it is unknown how artifacts from there relate to each other. Test excavations have extended below the plough zone, revealing some undisturbed lower portions of the site (Nicholson and Malainey 1995). Nicholson (1991, 1993) added to Vickers' ideas and suggested that pottery produced by groups from Minnesota and the Dakotas was found in southwestern Manitoba. These pottery designations include, as suggested by Nicholson (1991): SLW, Red River ware (now called Northeastern Plains Village ware group), Great Oasis wares, Talking Crow pottery, Campbell Creek pottery, Fort Yates Cord Impressed, and Scattered Village phase pottery (Ahler et al. 1991:29, 99). Thus, Vickers focus sites differ from Blackduck and Duck Bay sites in containing distinctive pottery, a larger percentage of exotic lithic materials (Catlinite, Tongue River silicified sediment, Knife River flint), being close to pot hole water sources, and having bison scapula or stone hoes (Nicholson 1991). Unlike the Lockport site, no actual maize or other horticultural plant has been recovered from the Vickers focus sites. Pottery from these sites often resembles an amalgamation of traits from the wares mentioned previously, with Nicholson (1991) suggesting that a distinctive Vickers focus pottery emerged after several years of the groups coresiding in the southwestern Manitoba area (Figure 4.3).

Nicholson (1991:172) suggested that "the Vickers Focus represent unique co-residence aggregations of people drawn from diverse origins but involved in similar subsistence practice and sharing a similar loose knit social organization." To date, the following sites have been given a Vickers focus affiliation by at least one researcher: Lowton (Nicholson and Malainey 1995), Johnas (Nicholson 1991), Lovstrom (Nicholson 1991), one occupation of Jackson (Nicholson and Hamilton 1997), Randall collection (Hartlen 1996a), Taylor (Nicholson and Hamilton 1997), Bradshaw (Nicholson and Hamilton 1997), Vera (Nicholson and Hamilton 1997), and Phillips (Nicholson and Hamilton 1997).

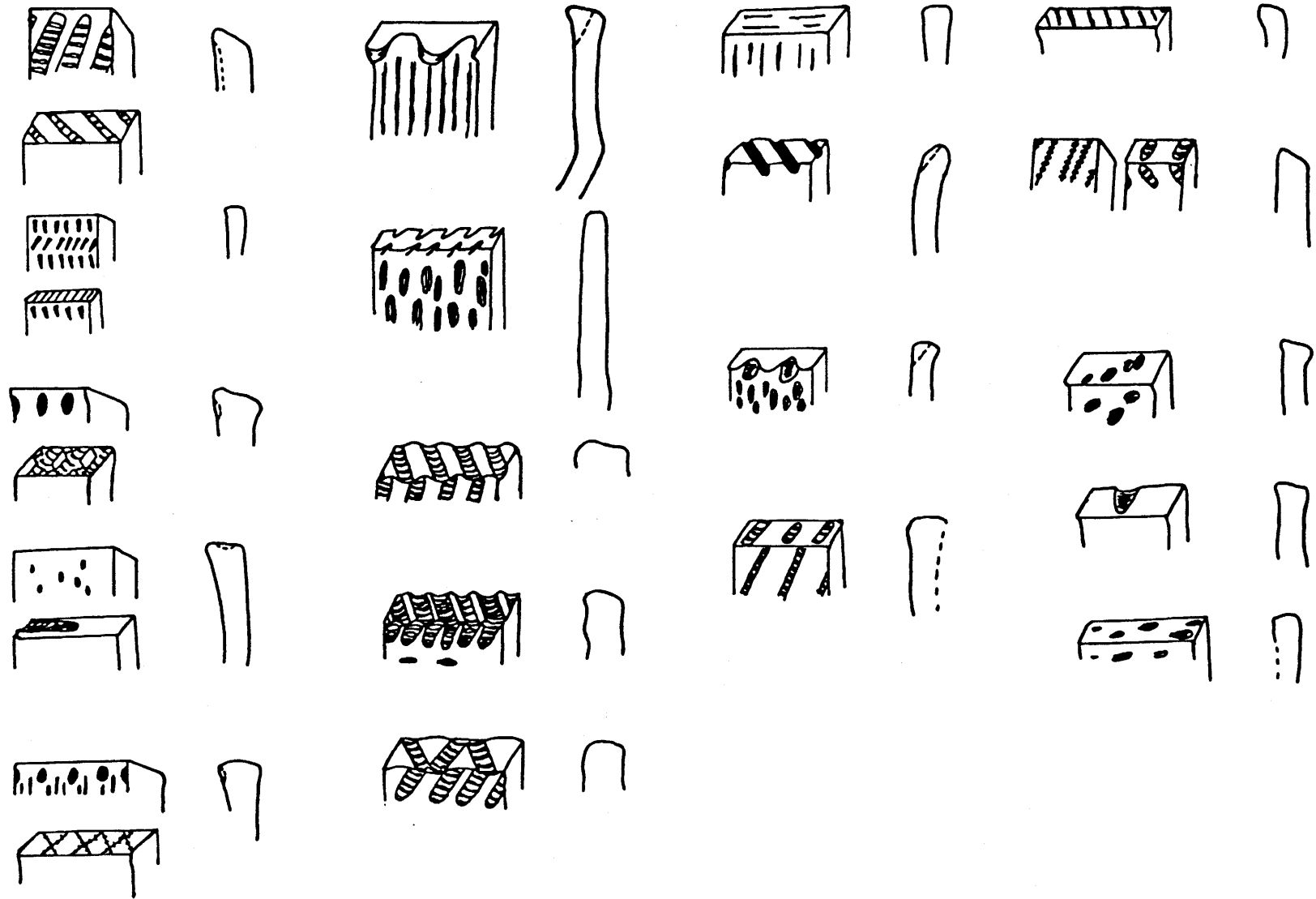


Figure 4.3. Selected rim sherds from the Lowton site identified as Vickers focus pottery (compiled by MMMN staff from Nicholson and Malainey 1995 for an artifact laboratory manual).

Hartlen (1996a), following Nicholson (1991), recently suggested that SLW was made by one of the immigrant groups that came together to produce the Vickers focus. He stated that “the subtle differences between Sandy Lake pottery and what has been defined as ‘Vickers Focus’ pottery is believed to represent a Scattered Village influence from the south” (Hartlen 1996a:i). Hartlen (1996a:i) also considered the Vickers focus to contain a regional variant of SLW in southwestern Manitoba. The Randall Collection also has Mortlach and Plains Village vessels (Callaghan 1979; Hartlen 1996a). Many of the Vickers focus sites are not stratigraphically intact, which leaves the association of Vickers focus, Mortlach, and SLW in these sites ambiguous at this time. At the Jackson site in southwestern Manitoba there is a slight separation between the earlier Blackduck and the later Vickers focus pottery. This arrangement suggests that Vickers focus and SLW are later components than Blackduck in Manitoba sites. Dates from this focus tend to cluster around A.D. 1400-1450 (Nicholson and Hamilton 1997).

**4.2.9 *The Mortlach/Wascana Controversy.*** Joyes (1973) refined the Mortlach pottery classification which was named by Wettlaufer (1955). Schneider and Kinney (1978) classified Mortlach as an ‘aggregate’. Malainey’s (1991) detailed review of south central Saskatchewan pottery led her to suggest divisions into a northern section with Wascana ware and a southern portion with Mortlach aggregate. She (Malainey 1991) resurrected the Moose Jaw culture pottery types, used by Wettlaufer (1955) at the Mortlach site, and the term Wascana ware, defined by Kehoe (1959), for the northern part of her study. The analysis of several sites north and south of the Qu’Appelle Valley into the Parklands showed that about 80 per cent of vessel forms in the northern area were S-, Straight, and Angled rim profiles which had cord-roughened, plain, and textile impressed exterior surfaces (Malainey 1995b:167). Cord wrapped tool impressions were frequent but other decorations such as pinches, incising, punctates and fingernail impressions are found on this group of vessels (Malainey 1995b:167). The southern Mortlach aggregate pottery differed since about one third had Wedge profiles and Straight Rim profiles were

common (Malainey 1995b:167). Malainey (1995b:167) also suggested that in the latter pottery there were higher occurrences of plain, simple and check stamped exteriors with a reduced variety of decorative techniques including the commonly used dentate impressions.

Using some of the same sites and data as Malainey (1991), Walde (1994) has expressed his view that the Moose Jaw culture and thus Wascana ware (Malainey 1991) is not a viable entity but the materials are instead part of the Mortlach phase. He considered all pottery in this study area to be the Mortlach phase split into contemporaneous Lozinsky and Lake Midden sub-phases (Walde 1994:iii). This first one is found in central to northern Saskatchewan and exhibits strong evidence of interaction with Selkirk peoples (Walde 1994:iii). The Lake Midden sub-phase to the south is considered to reflect interaction with Middle Missouri villagers. Malainey (1995b:167) argued that the data was organized differently by Walde (1994); for examples, the numbers of vessels and profile shapes were assessed in an opposed manner. Both researchers also differed in their opinions about ethnicity of Mortlach people, with Malainey (1995b:184) suggesting Atsina (Gros Ventre) and Walde (1994) proposing them to be ancestral Assiniboine. Despite these differing viewpoints, there may a relationship between SLW and some pottery found in Saskatchewan.

Walde (1994:145-146) noted that SLW shares a number of characteristics with some Mortlach pottery such as: globular shape with a slight neck constriction, no shoulders, vertical or incipient S rims, exterior surface finishes, areas and methods of decoration, as well as the association with high numbers of Knife River flint tools noted by Michlovic (1983:25). Since Mortlach is found to the west of the typically known range of SLW and it seems to be quite similar in description, there are implications of possible interaction between the peoples who produced each pottery.

Mortlach has artifacts with some similarities to Middle Missouri tradition ice gliders as well as pottery (Walde 1994:146). The simple and check stamped exterior

surface finishes that are found on some SLW vessels (Birk 1979) may indicate some kind of cultural continuum between the eastern extent of SLW, the Middle Missouri tradition, and Mortlach recovered in southeastern Saskatchewan, northeastern Montana, and northwestern North Dakota. Ahler et al. (1991:35) suggested that simple and check stamped vessels were common in the Middle Missouri tradition, with the latter being popular during the 1300s and then rapidly disappearing. It has been suggested that check stamping was indicative of the earliest Awatixa Hidatsa ethnic groups in the Middle Missouri subarea (Ahler et al. 1991:35). Perhaps this trait, and thus the people making these vessels, left the subarea and moved west since the southern Mortlach Lake Midden subphase (Walde 1994:172) is believed to represent interaction between Mortlach and Middle Missouri peoples.

Regardless of the controversial nature of some late precontact central southern Saskatchewan pottery classification, there is pottery in Saskatchewan which is descriptively similar to SLW. Malainey (1995b:183) noted in a rebuttal to Walde's (1994) ideas about Mortlach that:

If Walde's conclusions regarding the relatedness of Late Precontact period pottery are dismissed, it is necessary to also reject his hypothesis regarding the origin of southern Saskatchewan pottery. Walde (1994:143-149) suggests that Sandy Lake pottery is ancestral to his all encompassing Mortlach Phase pottery. The Mortlach features he (1994:145-148) finds similar to Sandy Lake include the globular shape, slight neck constriction, vertical or slightly S-shaped rims, the eclectic approach to vessel surface finish and decoration, lip notching and fabric-impressed exteriors. These are features which Malainey (1991) attributes only to Wascana pottery; Mortlach pottery is more conservatively finished and decorated, with low incidence of S-profile rims and fabric-impressed surface finishes. . . . It is possible, or even probable, that the pottery which most closely resembles Sandy Lake, i.e. Wascana pottery, was manufactured by the Assiniboin, but the division between Wascana and Mortlach pottery can not be denied (Malainey 1995b:183).

The author agrees that the list above conforms more close to SLW, rather than to Mortlach, which seems to have more similarities to Plains Village wares. Dyck and Morlan (1995:193) favoured this interpretation by noting that one layer at the Sjøvold site was identified as containing Wascana ware (Malainey 1991), in which they saw

similarities and a relationship to SLW. They (Dyck and Morlan 1995:193) noted that both wares had notched lips, straight rim profiles, vertical cord markings, and comparable colour (although the latter attribute is not reliable). It is also interesting that Wascana ware is split into similar types called Moose Jaw Cord-marked and Moose Jaw Plain (Dyck and Morlan 1995:193), which is similar to the Sandy Lake Corded and Sandy Lake Smooth types. Dyck and Morlan (1995:193) suggested that the makers of Wascana ware were not Atsina as Malainey (1991) had originally argued but that they were more likely Assiniboines:

Scholars familiar with Sandy Lake Ware have attributed it to the [Psinomani] Culture which they believe was a Siouan-speaking group, either proto-Assiniboine or proto-Eastern Dakota (see [Birk] 1979:176; Rajnovich 1987). Another line of evidence is the distribution of Wascana Ware. There is a high degree of overlap with the known distribution of Assiniboine Indians in central Saskatchewan at the time of European contact (cf. Russell 1991:176-186). If Wascana Ware was made by western Assiniboines, then Sandy Lake Ware still could have been made by either eastern Assiniboines or proto-Eastern Dakota. As to the age of Layer II [at the Sjøvold site], that could be an indication for an earlier Dakota/Assiniboine split and an earlier movement of Assiniboines into Saskatchewan than the near-1600 AD date which is often cited.

Thus, Dyck and Morlan (1995) as well as Malainey (1995b) noted similarities between Wascana ware and SLW. The connection between early Assiniboine and these two wares remains unsubstantiated but it is likely that the peoples who produced this pottery borrowed attributes from SLW.

Nicholson (1991:174) mentioned that Mortlach was common in southeastern Saskatchewan and southwestern Manitoba. However, this idea of Mortlach being commonly found in part of Manitoba was virtually abandoned until Walde (1994:415-423) included the Martins, Elliot Village, Snyder Dam 1, and Cherry Point sites in the Mortlach phase and Hartlen (1996a, 1996b) noticed it in the Randall collection along with SLW. Since then, Nicholson and Hamilton (1997) have recognized several Mortlach occupations in the *Makotchi Ded Dontipi* locale of the Lauder Sandhills, southwestern Manitoba. Given that there is now agreement that Mortlach and SLW pottery is found in

southwestern Manitoba, it further corroborates the idea of there being a relationship between Mortlach and SLW populations as suggested by Walde (1994).

**4.2.10 Saskatchewan Basin Complex.** As early as the 1970s, Byrne (1973:405) stated that relationships were apparent between pottery found in Minnesota and the three Prairie provinces. Byrne (1973) noted similarities between SLW and pottery of his Saskatchewan Basin complex which is found in Alberta, Saskatchewan, and Montana. Particularly notable are the overall simple shapes of Late Variant vessels (now assigned to the Old Women's phase) and decorative applications which parallel some used on SLW (Byrne 1973:689-690). However, it should be noted that these 'low quality' vessels of the Old Women's phase are typically very thick and usually associated with Prairie Side-Notched projectile points (Meyer and Hamilton 1994:122; Taylor 1995c); SLW is thin, finely made pottery that tends to be found with triangular or Plains Side-Notched points (e.g. Michlovic 1983:24). However, SLW has also been recovered with Prairie Side-Notched points in some sites (Caine 1974; Taylor 1994a). There is an overlap between dated sites of the Old Women's phase (A.D. 900-1350 in Meyer and Epp 1990) and earlier ones with SLW (A.D. 1000-1750). However, the geographical distribution of the former is farther west than known sites with SLW. The author is not suggesting that SLW is Old Women's phase; rather, there are a number of similar attributes.

Byrne (1973) suggested similarities between his Late Variant of the Saskatchewan Basin complex (Old Women's phase) from Alberta, Montana, and Saskatchewan to some pottery complexes in Manitoba. In particular, he (Byrne 1970:404) noted a likeness to what was "commonly referred to as 'undifferentiated Woodland' (e.g., Joyes 1969:151-157; Mayer-Oakes 1970:195-6)" pottery which is SLW:

Material in this category generally consists of cord marked or smooth body and rim sherds which do not reflect enough diagnostic attributes to justify classifying them in the Manitoba Corded/Blackduck ware. When rims are present they are usually near-vertical to slightly outslowing in profile, and lips may be rounded or flat. . . . "cord wrapped stick" impression and tool punctation predominate in the techniques, but the stick impressions tend to be of greater diameter (e.g., Joyes 1969:145-7) and the punctates may be



rectangular (e.g. Mayer-Oakes 1970:145-7)[should be page 196]. This material is often associated with Manitoba Corded and Winnipeg Fabric Impressed ware sherds in Manitoba, and there has been a suggestion that at least some of it relates to the Sandy Lake ceramic complex of Minnesota (Cooper and Johnson 1964:479).

Since Byrne (1973) noticed these similarities, it seems that researchers have not dealt with these ideas. Although Pankratz (1996:86) noted that Vessels 2 and 3 from the Bradshaw site had similarities to SLW, she suggested that they were more like the Early Variant Saskatchewan Basin complex pots (now assigned to the Avonlea phase and very similar to Brainerd pottery in Minnesota). However, this part of the site is late precontact, due to an undetermined Prairie or Plains Side-Notched projectile point being found in the same unit, one level below this vessel (Pankratz 1996:22, 143). This interpretation is inconsistent with Avonlea points typically being found with Avonlea vessels. After examining these vessels, their thin walls and other attributes make clear their similarity to SLW, which also is found in other southwestern Manitoba sites with triangular and side-notched points.

The Old Women's phase is suggested to range between in Saskatchewan and do overlap temporally with early SLW. Also, Prairie Side-Notched projectile points (Kehoe 1966) are found in sites containing Old Women's phase, in some Manitoba SLW sites (Taylor 1994a), and in the Snake River region in east central Minnesota (Caine 1974:63). Some Saskatchewan Basin vessels are bowl shaped (Byrne 1973) as are some SLW ones. However, the most outstanding difference between the two classifications is that Saskatchewan Basin vessels usually have very thick walls ranging from 6.0-15.0 mm (Byrne 1973:334), which differ from the thin to very thin SLW vessels (3.0-7.0 mm in Birk 1979:176). Decoration is usually slightly more ornate and more often on the exterior rim of Saskatchewan Basin vessels; they are usually textile impressed or obliterated (Byrne 1973:333).

The author has examined Old Women's phase pottery and some diagnostics from the Sherwin Campbell systematic surface collection and the Tschetter site excavations in

Saskatchewan (Taylor 1995c). Late Saskatchewan Basin complex or Old Women's phase pottery is certainly not SLW. However, given that some vessels have several attributes which are distinctive of SLW, it appears that there may have been a relationship between the two groups of people who were manufacturing 'undifferentiated Woodland' (SLW) and Late Saskatchewan Basin complex as Byrne (1973) had originally suggested. This relationship may have been the passing of traits between groups.

Although Michlovic (1987) noted a similarity between some Occupation 1 Snyder Dam vessels and SLW, the author suggests that these vessels may represent an Old Women's phase in the southwestern corner of Manitoba. Having examined these vessels, they seem to have many similarities to the Old Women's pottery examined from Saskatchewan (Taylor 1995c).

**4.2.11 Summary.** This section has dealt with various regional potteries which may have a relationship to SLW. These discussions can be summarized according to the order that they were presented:

- 1) Wilford's (1955:136) and Evans' (1961:34, 53) 'undifferentiated Woodland ware' is SLW.
- 2) Most Blackduck, Kathio, and Clam River focus components are older than ones with SLW. Although Reid and Rajnovich (1978) suggested that the Nett Lake Corded Blackduck type is practically identical to SLW, the attributes are significantly different to warrant the retention of this original distinction. Kathio series and Clam River focus pottery are not very similar to SLW, but they are sometimes found in the same sites.
- 3) The Cemetery Point Corded type (MacNeish 1958) of Winnipeg Fabric-impressed ware, is close enough to SLW to be considered the same. Although Cooper and Johnson (1964) should have deferred to this earlier type name, they did not. However, their terminology has now become standard in archaeological usage.

- 4) Reid and Rajnovich (1980) proposed Ash Rapids Corded pottery for some vessels around Lake of the Woods, northwestern Ontario. The author presented information which negates the differences proposed between this pottery and SLW.
- 5) Although the Duck Bay Stamp type is definitely distinct from SLW, the Notched Lip, Undecorated, and Decorated Lip types are sufficiently similar to SLW to propose that these three types are actually Sandy Lake notched and plain variants. In other words, Sandy Lake ware is sometimes found with Duck Bay Stamp type in the Duck Bay complex.
- 6) Sandy-ota represents a syncretic set of SLW and Oneota vessels in Minnesota and some eastern North Dakota sites such as Shea (Michlovic and Schneider 1993).
- 7) Sandy Lake ware is found in most Vickers focus sites as suggested by Nicholson (1991, 1994).
- 8) Some attributes of Mortlach and Wascana pottery are similar to those found on SLW but they are distinctively different to remain separate entities.
- 9) There are only a few discrete attributes which pottery of the Old Women's phase and SLW share. If these wares overlap spatially, it is only marginally.

While the examples listed above indicate many presumed cultural relationships between *Psinomani* material culture and other archaeological constructs, it is probably indicative of the highly interactive late precontact/early postcontact time periods.

Sandy Lake ware is often associated with other types of late precontact pottery such as the following examples: Blackduck horizon (Salzer 1980), Clam River focus (Kolb 1988), Selkirk composite (Arthurs 1978, 1986; Participants 1987; Trottier 1973), Plains Village tradition (Michlovic and Schneider 1993), Northeastern Plains Village ware group (Michlovic and Schneider 1993; Michlovic and Swenson 1998; Taylor 1994a), and Oneota phase (Michlovic and Schneider 1993; Peterson 1986). Because SLW is found with so many different cultural affiliations, there are several possibilities: 1) SLW was not made by one group of people; 2) it may have been traded; 3) the sites where it is found

represent gathering locations; or 4) there was a great deal of pottery experimentation during the late precontact period. It is possible that the people who made the pottery had a 1) larger sphere of influence, 2) trading range, or 3) moved farther than had once been thought. These possibilities indicate why some associations of SLW have been noted.

### **4.3 *Syncretic Vessels***

Vessels which have distinctive traits of more than one ware or type are often found, particularly in Late Woodland sites. Syncretic vessels like these may have resulted from contact and attribute borrowing, or some other cultural relationship. The earliest such vessels in the Eastern Woodlands and Northeastern Grasslands seem to be Blackduck pots which have some Laurel attributes (e.g. Lenius and Olinyk 1990). Hamilton (1981:71) noted that many Blackduck/Selkirk syncretisms also exist, with notable examples at the "Pic River (DdIn-2), Lac Seul (EbKe-1), Forestry Point (EgKl-1) and Potato Island (EiKc-1) sites. . . . This melding of traits on a substantial proportion of Selkirk and Blackduck ceramics is not surprising given the spatial, temporal, and cultural similarity of these cultures. . . ." Meyer (1998:43) stated that six vessels from the Goldsworthy site in Saskatchewan were Rainy River-Selkirk syncretisms and Walde (1994) noted that plenty of Selkirk/Mortlach syncretisms have been found. Other examples are the shell tempered (a typical SLW trait) vessels (#3 and 9) from the Lloyd Site at Nipawin, Saskatchewan, where almost all pottery is grit tempered (Quigg 1983:165). These vessels appear to be Selkirk/SLW syncretisms, since they have a single row of punctates and obliterated textile impressed surface finishes characteristic of Selkirk pottery. Meyer and Hamilton (1994:124) noted that peoples making Selkirk pottery and SLW may have encountered each other. Valppu (1989:17) noted an apparent overlap between Selkirk and Sandy Lake cultures, as evident from occurrences of pottery at the Big Rice Site in Minnesota. The author feels that this idea can be corroborated by: the finding of so many Selkirk/SLW sites; the overlap in time frame as well as areal

extent; the similar side-notched and triangular projectile points; and the overlap in some pottery attributes between southern Selkirk and SLW.

At the Lovstrom site in southwestern Manitoba, Nicholson (1990:40) noted that “individual rim sherds in Blocks D, E, G, and H displayed an intriguing combination of Eastern Woodlands or Boreal Forest and Plains stylistic elements and appear to be related to Sandy Lake and Red River ware (Michlovic 1987) found to the southeast, and even more strongly to the Scattered Village Complex found to the south.” This interpretation indicates the possibility of SLW/Plains Village Syncretic vessels. The finding of check and simple stamped surface finishes on both SLW and Plains Village pottery may indicate cultural connections.

Michlovic and Schneider (1988, 1993) reported that some SLW vessels at the Shea site have Oneota like attributes such as strap handles and incising. Given the close proximity of this eastern North Dakota site to the Oneota heartland, which was likely in Minnesota, this finding is not surprising. The Northeastern Plains Village ware group has both of these traits. Thus, this association is just another example of SLW syncretic vessels.

#### ***4.4 Bradbury Phase***

The Bradbury phase is a protocontact archaeological classification for which Birk (1992:209) explained the reason for its creation:

French activities must be considered an integral part of North American heritage as well. With that in mind, archaeologist Elden Johnson [1985] proposed a protohistoric Bradbury Phase to define and explain the final stage of Mdewakanton Dakota cultural maturation in the Mille Lacs Lake region of east-central Minnesota. The Bradbury Phase involves the study of contemporary paper records and archaeological deposits containing a mix of 17th and 18th century French and Dakota material assemblages (Birk and Johnson 1992; Johnson 1985).

In addition to the French artifacts, the following pottery wares are found in Bradbury phase sites: SLW (Table 3.1), Ogechie series (a locally made version of Orr phase Oneota), and Orr (Birk and Johnson 1992:209). It is believed that the precontact

materials from these sites represent the development of the Eastern or Mdewakanton Dakota (Birk and Johnson 1992:206), which obviously has relevance to this thesis. Hence, the notion of SLW (Meyer and Hamilton 1994:125) and Oneota (Gibbon 1986:334) pottery, which are both found at Bradbury phase sites, being made by proto-Siouans becomes more likely. The relevance of Oneota and Oneota-like vessels being found with SLW in many other sites, outside of the Mille Lacs Lake region, is also intriguing (e.g. Breakey 1981; Flynn 1993; Gibbon 1995; Michlovic and Schneider 1993; Taylor 1994a).

The Bradbury phase sites are described as small hamlets (previously the Cooper and Wilford sites were known as villages) whose cultural material is “neither Mississippian nor Woodland, in the strict definition of those traditions, but is a unique version of Oneota, in which wild rice is a substitute for maize” (Birk and Johnson 1992:211). An alternate explanation is that Sandy Lake and Oneota people aggregated at these different sites at certain times of the year. Even though bone tools are present, only one bison scapula hoe was found unlike at nearby Oneota sites where this is a common find (Birk and Johnson 1992:209). Johnson (1985:159) noted that the Cooper and Wilford Bradbury phase sites, which have SLW, show a reliance on bison, indicating a subsistence pattern similar to that of the Oneota and Northeastern Plains Village groups which inhabited the adjacent Grasslands. From these sites, many small, medium, and large mammals, along with fish, waterfowl and turtle were recovered (Johnson 1985:158-159). Bradbury phase lithics are similar to those found in northern Oneota assemblages such as: triangular points, celts, pipestone elbow pipes, milling stones, abraders, trapezoidal end scrapers, double-pointed and bifacially flaked knives (Birk and Johnson 1992:209). Many features, which are interpreted to be wild rice threshing pits, are found at these sites, and houses have also been recorded (Birk and Johnson 1992:210). Thus, the Bradbury phase sites contain early postcontact SLW which indicates the longevity of this ware, even past contact with the French.

#### ***4.5 Summary***

This chapter has reviewed the classification problems inherent in studies of pottery pertaining to SLW. Similarities to other kinds of pottery and how they relate in some sites was also outlined. Some ideas about classification of this ware and similar wares or types were either formulated or reiterated in this chapter. Evidence of syncretic vessels associated with SLW was discussed. The Bradbury phase, which is the only phase associated with SLW, was explained. Chapter Five deals with new information found in this study and how it may solve some of the problems raised in the previous chapters.

## **CHAPTER FIVE: SITE INFORMATION**

### ***5.1 Introduction***

Having considered the earlier research dealing with SLW in previous chapters, this chapter will discuss new or updated information from the study area (Figure 1.2). Some of the artifacts from these sites have been analyzed by other researchers but this may have been many years ago and a re-evaluation was required (e.g. Falcon Lake site). Other sites were chosen because there has been little or no research completed on the artifacts. For example, later components at the Wanipigow site have not been dealt with in as much detail as the Laurel or Blackduck ones. However, to completely analyze the late component would require cataloguing and would be a thesis project on its own. Sometimes, no information would otherwise be available, as those who collected the information do not have adequate time to publish information (e.g. Red Sky and River Mouth sites from Manitoba Historic Resources Branch). Some of the sites may have been suggested to contain SLW before but this was usually tentatively. In some instances, no individual vessels were identified before this research project. The sites discussed below are only the ones which resulted in SLW being recognized, as opposed to all of the sites examined in preparation for this project (Table 1.2).

### ***5.2 Limitations***

Archaeologists encounter difficulties when studying artifacts, particularly those which were not excavated by themselves or were collected long ago when methods may not have been as stringent. In addition to these limitations, the author encountered problems similar to most western Canadian pottery studies: there were few reconstructed



vessels or partial pots; sherds were often too small or exfoliated; sample size was minimal; provenience information was limited; and sometimes information from published descriptions had to be used as it was not possible to physically examine the samples. Although Manitoba and Saskatchewan sites do not contain as much pottery as some other locations, for example the Middle Missouri subarea, potsherds frequently account for a high percentage of the total artifact inventory (Byrne 1973:iv; Simon 1979:3). Sometimes, it was time consuming just to locate the acquisition in the repository. Many older collections were not catalogued, and some of these uncatalogued artifacts were just placed loosely in partially open bags with their artifact tag, just as they had been left decades ago. One collection that the author wanted to examine had such badly decaying plastic bags with tape that one could not look at the artifacts without the possibility of mixing them up. The author found these unusable, as it would take too much time to properly sort and seal the multitudinous numbers of artifacts from the site. Transportation of these fragile boxes would have undoubtedly mixed up the artifacts. Another problem encountered during this research concerns databases. Although Peter Walker kindly provided the author with a search of the Manitoba database, only one Sandy Lake site was found. This site turned out to be a surface collection of a few corded body sherds. Since there are many more sites in Manitoba with SLW, there is likely an identification problem (e.g. people naming materials Late Woodland or Selkirk, of which there are countless entries). While some of the previously mentioned limitations are not difficult to solve, they were mentioned so that other researchers taking on similar research will be aware of these problems.

Also, it was not possible for the author to afford the visitation and examination of SLW from all areas where it was found (e.g. Ontario, Wisconsin). Thus, photographs and published reports were often utilized. Although the author was primarily studying Manitoba artifacts, there was no funding available to assist in this activity, since my

studies were completed in Saskatchewan. In any case, funding limited the viewing of much SLW found to the east.

Another problem encountered is the limited amount of research, other than cultural resource management surveys, conducted in southeast Saskatchewan. Few Late Woodland components have been excavated in this area other than at the Sanderson (Magee 1997), Long Creek (Wettlaufer and Mayer-Oakes 1960), and the Estevan Tipi ring site (Table 1.2) which limited the possibility of studying SLW in this area. There are also few sites which have been excavated in west central Manitoba area with the exception of Aschikibokahn and two sites on the Swan River excavated by Gary Wowchuk (Meyer 1998:73).

A major limitation in analyzing SLW was encountered when reviewing pertinent literature about this pottery. While the original article identifying SLW (Cooper and Johnson 1964) was quite detailed, many researchers seemingly neglected to use this as a basis for comparison and needless new terms have been used for what is SLW (e.g. the overall similarity to Ash Rapids Corded and some Duck Bay types). In fact, Cooper and Johnson (1964) also failed to deal fully with previously published descriptions. They only mentioned the similarity of SLW to Griffin's (1952:100) Raymond focus pottery from Illinois as well as MacNeish's (1958) shell tempered Selkirk focus and Cemetery Point Corded type in Manitoba. Part of this problem is related to researchers being more isolated at that point in the development of archaeology. As a result, literature about this subject is more complex than it needs to be. It also indicated to the author that one needed to look at many publications or sources about the late precontact/early contact period from all of the presently known areas where SLW is found. This problem was complicated by these sources not being available in Saskatchewan. Thanks to other researchers, it was possible to obtain even obscure references. After reviewing the numerous sources, a current list of sites with SLW was compiled (Tables 3.3 and 5.1). Hopefully, more studies such as this one will help to clarify archaeological pottery.

Table 5.1. Sites containing Sandy Lake ware.

SITE NAME	SITE #	CONTEXT	LOCATION	VESSELS/PORTION	ASSOCIATION	SOURCE OF DATE
WISCONSIN						
Fiddle*	47BT25	Excavated	Burnett county; NW	five vessels?	B, C	Cooper and Johnson 1964; Kolb 1988; Salzer 1986:309
Morny****	47AS47	Excavated	Ashland county; NW	at least 1 rim sherd	B, ?	Peterson 1986:17; Salzer 1986
		Test Exc.	Apostle Islands; NW	unknown #	?	Salzer 1986:309
MINNESOTA						
Hill Point				125 Undif. woodland rims	B	Evans 1961:34
Battle Island	21AK9	Excavated		28?		Birk 1979:175; Gibbon 1987
Mitchell Dam*	21BK1	Excavated	Becker county	?	B, K	Cooper and Johnson 1964:478; Johnson 1969
	21BK ?		Tamarac Nat. Wildlife Refuge	Sandyota	?	Gibbon 1995:186
Cotton Lake Island**	21BK20			2 bowls with 2 burials	?	Birk 1979:175, 178
Schocker	21BL1	Excavated	South shore Blackduck L.	131 Undif. woodland rims	L, B	Evans 1961:34
Pimushie	21BL?	Excavated	Beltrami county	?	?	Scott Anfinson, pers. comm. 1995 in BRW Inc. 1995:93
Washkish	21BL2		Tamarack R. & Upper Red L.	23 Undif. woodland rims	B	Evans 1961:34; Lugenbeal 1976:776
Scott*, ***	21CA1	Excavated	Near Mud Lake dam, Deer R.	9+ vessels	B, F trade items	Johnson 1969:34; Lass 1980:31; Lugenbeal 1976:775
Onigum Marina*	21CA?	Excavated	Agency Bay, Leech Lake	2 vessels	none	Birk 1977b; Birk 1979
L. Winnibigoishish Dam	21CA4	Surf. & Test	Mississippi R., L. W.	1 rim	MW?, B, P: 5 mounds	Johnson et al. 1977:47
	21CA6		Leech Lake	Check stamped rim + ?	unknown	Anfinson 1979:230; Birk 1979:181
Field Site #4	21CA12	Surface	Battle Point on Leech Lake	6 stamped, smoothed rims; 113 body	Decorated German silver	Anfinson 1979:230; Birk 1979:181; Johnson 1979:69; Peterson 1986:17
Field Site #6	21CA10	Surf./disturbed	Leech Lake	At least 2 rims	B, Ogechie	Johnson 1979:64-65
Crooch*	21CA14	Test exc.	?	in Peterson 1986	B, mounds, middens, rice pits	Johnson 1979:70; Peterson 1986
Field Site #29	21CA15	Surface	North end Sucker Bay, Leech L.	one?	B	Johnson 1979:71
	21CA19	Surface?	SE Steamboat Bay	several rims	B	Johnson 1979:74
Norway Lake*, **	21CA22	Excavated	Pine River, Norway Lake	8 (habitation); 2 (mound)	1 Br, 1 Ogechie, 2 B	Birk 1977a; Birk 1979; Ready 1979:143
Steamboat Lake	21CA27		Cass county	Sandyota	?	Gibbon 1995:186
Langer; F.S. #20	21CA58	Excavated	Cass county, Gull Lake	2 rims	Kathio	Johnson 1979:25, 44
Field Site #54	21CA103	Surface	Agency narrows-island	3 body sherds	none	Johnson 1979:136
Squaw Pt.; Field Site #5	21CA111	Surface	Peninsula Gull L./Steam. Bay	28 body sherds	none	Johnson 1979:48
Upper Rice Lake*	21CE4	Excavated	Upper Rice Lake	Stamped SLW?	B, C	Johnson 1969
Lower Rice Lake*	21CE5	Excavated	Lower Rice Lake		B, C	Johnson 1969
	21CH35	Test pit	Interstate Park near Falls	2 rim sherds (1 vessel?)	?	Lofstrom 1988:49; found by Mike Budak in 1978
None specified	21CY?		Clay county	Unspecified	None specified	Lofstrom 1988:49; found on Statewide Arch. Survey (1978)
None specified	21CW?		Crow Wing county	Unspecified	None specified	Lofstrom 1988:49; found on Statewide Arch. Survey (1978)
	21DL48	Surface	Near L. Christina	40 sherds (1 vessel)	none	Lofstrom 1988:49; found on Statewide Arch. Survey (1981)
Baswood Shores	21DL90	Excavated	Alex. Moraine complex; Mud L.	Two shell tempered vessels	none	Justin and Schuster 1994:82
Osufsen*, **	21IC2	Excavated	Bowstring R. near Spring L.	36 Undif. woodland rims	L, B	Cooper and Johnson 1964:478; Evans 1961:34; Lugenbeal 1976:776
Seelye Point	21IC22	Surf. & Tested	Point in Cut Foot Sioux L.	3 rims; 38 shell tempered body	MW?, B	Johnson et al. 1977:61
Williams Narrows	21IC23	Surf. & Tested	Near channel-Cut Foot Sioux L.	3 + 1? rims	Plano, A, L, B, P	Johnson et al. 1977:66, 67
Little Cut Foot Sioux L.	21IC24	Surf. & Tested	Chippewa National Forest		A (Old Copper), B	Johnson et al. 1977:74
Plug Hat Point	21IC27	Surf. & Tested	Plug Hat Point Campground	12 rims	"Chippewa village site"	Johnson et al. 1977:80
Sugar Lake	21IC28	Surf. & Tested	NW shore of Sugar Lake	4 shell/3 grit rims; 25 shell body	Br, B	Johnson et al. 1977:82
Mississippi Inlet	21IC32	Surf. & Tested	N. Miss. inlet to L. Winnibig.	25 rims; 81 shell body sherds	Br, B, P	Johnson et al. 1977:88
Unnamed	21IC33	Surf. & Tested	N. bank of Mississippi above inlet	23 rims	Br, L, B	Johnson et al. 1977:91
Unnamed	21IC40	Surf. & Tested	Tamarack Pt., L. Winnibig.	1 rim + 1 possible other	B	Johnson et al. 1977:104
White Oak Point*	21IT1	Excavated	Itasca county, near Deer R.	65 rims, 56 v. +1check stamp		Cooper and Johnson 1964:478; Lugenbeal 1976:778, 1982
Triangle Island	21KA29	Excavated	Kanabec county; Knife Lake	Parts of 3 vessels	P	Hendrickson (1984:62-63, 74) in Lofstrom 1988:49
Nett Lake, sawmill*	21KC1		Nett Lake	31 Undif. woodland rims	L, B, C	Evans 1961:34; Johnson 1969:????; Lugenbeal 1976:630, 777
Nett Lake, ball park	21KC1		Nett Lake	?	B	Lugenbeal 1976:777
None specified	21KC?		Koochiching county	Unspecified	None specified	Lofstrom 1988:49; found on Statewide Archaeological Survey (1981)
Pearson			?	small amounts	?	Lugenbeal 1976:630
Aquipaguetin Island*	21ML2	Tested	Rum R., L. Onamia, ML-KSP	unknown # - Bradbury phase	K, CR, wintering site for Father Louis Hennepin (1680)?	Birk and Johnson 1992:208; Johnson 1969; Wilford 1955:136
Vineland Bay*	21ML7	Excavated	Outlet of Mille Lacs L., ML-KSP	unknown # - Bradbury phase	F	Birk and Johnson 1992:208
Cooper Village*	21ML9	Excavated	Rum R., L. Ogechie, ML-KSP	At least 3; Bradbury phase	Oneota-like, O, C, F	Birk and Johnson 1992:206; Johnson 1969; Lothson 1972
Cooper Mound*??	21ML10		Rum R., L. Onamia, ML-KSP	unknown # - Bradbury phase	Ogechie, F	Birk and Johnson 1992:206; Ready 1979:143
Petaga Point*	21ML11	Excavated	Rum R., Lake Ogechie, ML-KSP	12 v. - Bradbury phase	MW, St. Croix, O, On, K, F	Birk and Johnson 1992:206; Bleed 1969; Johnson 1969, 1978
Wilford	21ML12	Excavated	Rum R., L. Ogechie, ML-KSP	unknown # - Bradbury phase	O, F, C, P	Birk and Johnson 1992:208
Cooper Mound	21ML16	Excavated	Rum R., L. Onamia, ML-KSP	unknown # - Bradbury phase	Ogechie, F	Birk and Johnson 1992:209; Lothson 1972:15
Mud Lake*			?	18 Undif. woodland rims	B	Evans 1961:34
Sucker Bay			Leech Lake	unknown #	none	Arthurs 1978:57; Birk 1977a:29
Old Shakopee Bridge*	21ML20	Excavated		24 SLW	St. Croix, K.	Gibbon 1976
Crosier Cemetery	21ML33	Excavated?	Mille Lacs county	?	?	Mather 1991 in Justin and Schuster 1994:83
	21MO21	Surface	Morrison	1 rim sherd	Lt. Zebulon Pike's 1805 wintering post	Lofstrom 1988:49; found by Douglas Birk in 1984
Mooney****	21NR29	Excavated	Norman county, Red River Valley	6 shell, 45 grit vessels	Archaic component	Michlovic 1987:45
Mooney Phase II	21NR29	Excavated	Norman county, Red River Valley	2 Corded, 1 Smooth (shell & grit)	Archaic component	Johnson 1995:84-85
Browns Valley	21TR5	Excavated	Lake Traverse, Minn./S Dakota bord	1 corded, 1 smooth, 1 textile imp.	Pa, PV	Anfinson 1997:107-109

<b>NORTH DAKOTA</b>						
Irvin Nelson	32BE208	Excavated	Sulleys Hill Nat. Game Preserve	Several vessels (shell)	NEPV	Michlovic 1983:28; Gregg and McCauley 1994:6,25
Beeber	32LM235			1 Blackduck/SLW syncretic vessel		Schneider 1982:119-121
Chappell	32LM240			Sandy Lake at all?		Schneider 1982:116
Shultz*****	32????	Excavated	Ransom county; Sheyenne R.	29 v (Lisbon Tool Impressed)	NEPV, P	Michlovic and Swenson 1998:16; Wood 1963:232
Homer-Kane*****	32RY77	Excavated	Ramsay county; Devils Lake	2 v (#4, 8, 11); possibly #2, 3, 5	A or EPW, NEPV, P	Gregg 1994:4,24
Jamestown Mound**	32SN22	Excavated	Component III of Mound B	1 vessel	MW, St. Croix, NEPV	Snoorland-Coles 1985:5,13-16
Jamestown Mound	32SN207	Excavated		1 vessel		Snoorland-Coles 1985:5,17-18
?	32SN35	Disturbed/coll.	Jamestown Reservoir; James R.	2 rims (Lisbon Tool Impressed)	inundated	Wheeler 1963:225
Kirschenmann III	32SN247			Sandy Lake at all?		Schneider 1982:116
Naze	32SN246					Gregg 19??; Schneider 1982:116
Hendrickson III	32SN403	Excavated	Stutsman county; James R.	Several vessels	NEPV	Dahlberg 1977:164-170; Gregg 1994:6,25
Other N.D. reports						
<b>ONTARIO</b>						
Bundoran	DjKn-5			1 vessel	?	Spiedel 1989:26,39
Lady Rapids	DcKc-1	Excavated		5 Corded and Smooth	B	Callaghan 1982:28
Lake of the Woods	DjKa-5	Excavated?		Sandy Lake/Nett Lake	?	Reid (Rajnovich and Reid 1978:48)
Long Sault	DdKm-1	Excavated	Rainy River	15 rims	S, P	Arthurs 1978:59
Neebin*	DgKl-14	Pits, 1 Unit	Island of NE Sabakong Bay	1 vessel	L, S, P	Patershank 1989:47 similar to Long Sault site vessel
Nestor Falls	DgKl-3	Excavated		3 vessels	?	Halverson 1992:42-55
Potato Island	lIKc-1	Excavated	Birch Lake, English R. system	1 rim	B, S, P	Arthurs 1978:61; Koezur and Wright 1976:??
?	DdKm-29	Test pit	Rainy River	1 rim	B	Arthurs 1978:61
Pither's Point	?	Excavated	Rainy River/Lake	unknown #	B, P	Arthurs 1978:61
Armstrong campsite	?	Surface	Rainy River, Long Sault Rapids	small amounts	?	Lagenbeal 1976:630, 775
Oak Point Island*	?	Excavated	Oak Point on Rainy Lake	small amounts	B, P	Arthurs 1978:61; Lugenbeal 1976:630, 776
?	DdJx-1	Surface	Quetico Lake, Quetico	1 rim & body sherds	?	Arthurs 1978:61
?	DdJv-1	Surface	Sara Lake, Quetico	1 rim	2 B rims	Arthurs 1978:61
?	DdJv-1	Surface	Sturgeon Lake, Quetico	1 rim	Pa, A, 2 B rims, P	Arthurs 1978:61
Prairie Portage	DdJu-2	Surf. & Exc.	Birch Lake, Quetico	2 rims	10 B rims, 10 S rims, P	Arthurs 1978:61
?	DdJu-3	Surface	Basswood Lake, Quetico	1 rim	?	Arthurs 1978:61
?	DdJv-2	Surface	Agnes Lake, Quetico	2 rims & neck sherds	?	Arthurs 1978:61
?	DdJv-2	Surface	Edge Lake, Quetico	1 rim	?	Arthurs 1978:61
Quetico Island	DdJw-2	Surf. & Exc.	Quetico Lake, Quetico	2 rims	L, B	Arthurs 1978:61
The Pines	DdJv-1	Surface	Pickert Lake, Quetico	3 rims	Pa, A, L, 2 B rims	Arthurs 1978:61
French Lake	DdJs-2	Surface	French Lake, Quetico	11 rims	L, 13 B & 4 S rims, P	Arthurs 1978:61
Turtle Lake	?	Surface	Turtle Lake, Seine R. system	1 partial vessel	L	Arthurs 1978:61
Big Turtle Narrows	DdJx-4	Surface	Turtle Lake, Seine R. system	3 rims (1 vessel)	1 B rim	Arthurs 1978:61
Kashabowie Lake	?	Surface	K. Lake, Kaminiqtiqua R.	?	?	Arthurs 1978:61
Mound Island	DdJl-2	Test pit	Whitefish Lake	2 rims	?	Arthurs 1978:61
Martin Bird*????	?	Excavated	Whitefish Lake	?	?	Arthurs 1978:61; Dawson 1987???
?	DdJf-4	Surface	Black Sturgeon Lake	1 rim	B	Arthurs 1978:61
?	DdJf-5	Surface	Black Sturgeon Lake	1 rim	?	Arthurs 1978:61
Ash Rapids West	DdJq-5	Excavated	Lake of the Woods, Rainy Lake	2 'Ash Rapids Corded' vessels	L, B, S	Reid and Rajnovich 1980:77
Meck	DdJp-3	Surface	West-central Lake of the Woods	8 'Ash Rapids Corded' v.	L, B, S	Reid and Rajnovich 1980:70, 72
Spruce Point	DdJq-1	Surf. & Exc.	North central, Lake of the Woods	3 'Ash Rapids Corded' v.; 4+ SLW	A, L, B, S, P	Reid and Rajnovich 1980:70, 72
Spruce Point	DdJq-1	Excavated	Lake of the Woods		B, S	Rajnovich 1983:?????, 1988-61
Ash Rapids East	DdJq-4	Surf. & Exc.	Ash Rapids, Lake of the Woods	4 'Ash Rapids Corded' v.	A, L, B, S, P	Rajnovich 1987:60; Reid and Rajnovich 1980:70, 72-73
Dungarvan	DdJq-11		Northwest, Lake of the Woods			
	DdKm-20	Surface	East-central, Lake of the Woods	1 'Ash Rapids Corded' v.	A & another component	Reid and Rajnovich 1980:70, 73
	DdKm-27	Surface	East-central, Lake of the Woods	1 'Ash Rapids Corded' vessel	L, B	Reid and Rajnovich 1980:70, 74
	DdKm-28	Surface	East-central, Lake of the Woods	1 'Ash Rapids Corded' vessel	L	Reid and Rajnovich 1980:70, 74
	DdKf-16	Surface	Northwest, Lake of the Woods	1 'Ash Rapids Corded' vessel	McKean, A?, L, B, S, P	Reid and Rajnovich 1980:70, 75
Nazoteka Point	DdKf-1		Lake Nipigon	probable; unknown #	?	Arthurs 1978:61
Mahon	DdKp-6		Northwest, Lake of the Woods	?	?	Rajnovich 1987:61
Ballynacree	DdKp-8	Excavated	Winnipeg River; near Kenora	?	?	Johnson 1995:93 Inc. 1995-93; Rajnovich 1987:60
Jeffrey	DdKf-3		Northwest, Lake of the Woods	?	?	Rajnovich 1987:60
Mud Portage	DdKf-4	Surface	Northwest, Lake of the Woods	1 'Ash Rapids Corded' vessel	A, B?, S, petroglyphs	Rajnovich 1987:60; Reid and Rajnovich 1980:70, 75
Muriel Lake	?	Surf. & Test?	North of Lake of the Woods	1 'Ash Rapids Corded' vessel	A, L?, S	Reid and Rajnovich 1980:70, 75
	DeKi-6	Surface	Northwest Rainy Lake	1 'Ash Rapids Corded' vessel	B	Reid and Rajnovich 1980:70, 75
<b>MANITOBA</b>						
Waukinen						MacNeish 1958:??
Lockport	EaLf-1	Excavated	East bank of Red R.	Unknown #: lots	L, B, S, RRC, others?	MacNeish 1958:??; Flynn 1993:??
Lockport II	EaLf-2	Excavated	West bank of Red R.	Unknown #: lots	????	Gord Hill, other article???
Falcon Lake*	DdKl-7	Excavated	Falcon L., Whieshell Park	he says 1 vessel???	?	Arthurs 1978:61; Trotter 1973
Wanipigow Lake*	EgKx-1	Excavated	Wanipigow Lake	unknown # (at least ??)	L, B, S	Arthurs 1978:61; Rajnovich 1987:61 (in Stan Saylor pers. comm)
Thunderbird*	EgKx-15	Excavated	North shore of Wanipigow L.	1 corded vessel assoc. with clay fillc.	L, B; large petroform	Carmichael 1979:46-47, 50, 58-59
The Forks?	DdLg-33	Excavated	Assiniboine & Red R. junction			
G. Randall collection	DdLw-5	Surface	Near Killarney (town)		L, B, Vickers, Plains, Montach	Hartlen 1996a:??

Lowton	DiLv-3	Surf. & Exc.	Close to Pelican L.	Lots	Mortlach, S. Middle Missouri	Nicholson and Malainey 1995:??; Reid 1972
Lovstrom	DjLx-1	Excavated	Jock's Creek, Souris R.			
Duthie	DiMe-18	Excavated	Makotchi Ded-Dontippi locale	?? vessels	NEPV. IMM	Taylor 1994a:??
Bradshaw	DiMe-18	Excavated	Makotchi Ded-Dontippi locale			
Johnas	DjMd-11	Surface	North of Assiniboine R.			
Snyder II North	DgMg-15	Surface	Antler Creek			Syms 1977
Tairace Bay	GRS-3	Excavated	Tairace Bay, Saskatchewan R.	21 rims (vessels)?	McKean, L. B. S. P	Mayer-Oakes 1970:14, 54-354

**SASKATCHEWAN**

Lloyd  
Cote

\*Probable wild rice harvesting site

\*\*Associated with human burial

\*\*\*This date was taken from level 4, which is most likely Blackduck. Cooper and Johnson's (1964:478) findings suggested that Sandy Lake ware was found above this. Hence, SLW is dated later than this at the site.

\*\*\*\*From thermoluminescence dates

\*\*\*\*\*Excavated by Thad C. Hecker, and few notes were made, other than the sherds were found in "the lower levels of the . . . village ash pits" (Wood 1963:231).

\*\*\*\*\*calibrated at one standard deviation (Stuiver and Reimer 1993)

ML-KSP=Mille Lacs-Kathio State Park

Site numbers in the U.S. are designated by trinomials: state (#)-county (two letters)-number of site in that area

Site numbers in Canada are based on the Borden system: AaBb represent Borden units that were assigned across the country-number of site in that area

P=Paleoindian

B=Blackduck

C=Chippewa/Ojibwa

A=Archaic

S=Selkirk

F=French

EPW=Early Plains Woodland

Br=Brainerd

P=Postcontact

MW=Middle Woodland

O=Ojebtic series

NEPV=Northeastern Plains Village

L=Laurel

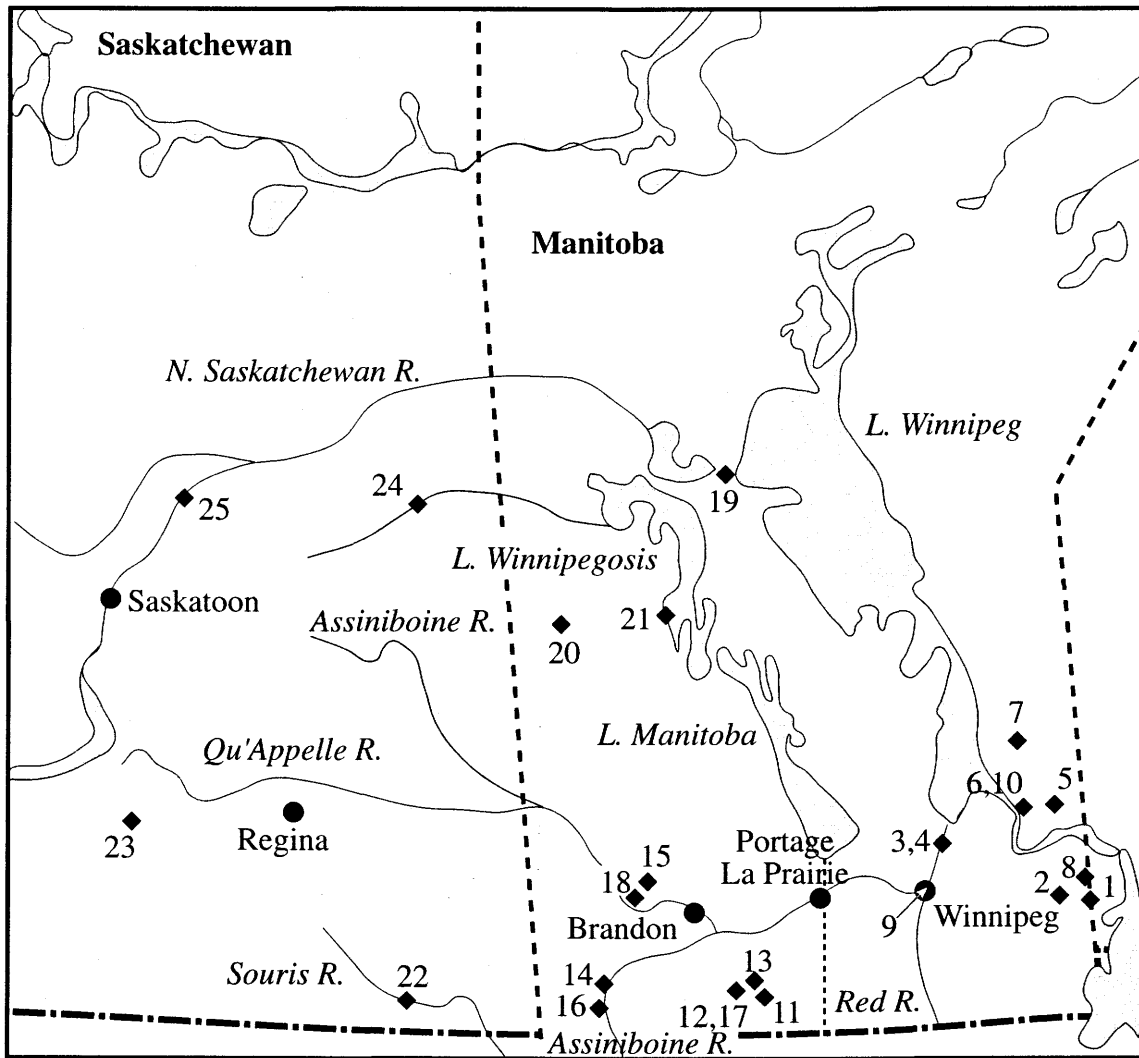
RRC=Rainy River composite

Regardless of the problems outlined above, a large number of sherds and collections were examined by the author (Table 1.2), which included just about anything with Late Woodland and Plains as well as sometimes Middle Woodland pottery. It was deemed important to be familiar with the variety of pottery complexes in all areas where SLW is found. The listings below indicate the best examples of SLW, or its influence, in the northwestern areal extent of this ware (Figure 5.1). Particularly pertinent information about each part of the study area is summarized in Table 5.2.

### **5.3 Southeastern Manitoba**

The author has designated the split between southeastern and southwestern Manitoba to be an imaginary line running north/south midway through Lake Manitoba, since this is the approximate centre of the southern part of the province (Figure 5.1). Although it may seem unusual to split these two regions, the reason for doing so is that the southeastern portion of this province is largely regulated by Winnipeg archaeologists from civic, provincial, and federal bodies. Archaeological research in the other portion has been carried out largely by Brandon University professors, students (such as the author), and avocationalists. Another reason to split the two regions is that they contain different environmental zones (Figure 1.3), with the southwest part consisting mainly of the Northeastern Grasslands/Aspen Parkland and the southeastern portion being largely Boreal Forest. A third reason for this split is that SLW was identified much earlier in the southeastern portion (Trottier 1973), whereas it has been identified more recently and tentatively in southwestern Manitoba.

**5.3.1 Redsky (DjKt-2).** This site, also listed as SPIT 91 and 92, was recorded by Gordon Hill and David Riddle of Manitoba Historic Resources Branch (HRB) in October, 1991 (Hill 1991). It is located north of the Falcon River mouth at the west end of Shoal Lake (Indian Bay) near Winnipeg (Hill 1991) (Figure 5.1). Hill (1991) collected the artifacts, under permit #A52-91, after the Redsky site was badly disturbed by soil stripping and stockpiling to be used for landscaping by the City of Winnipeg. He



**Legend**

- |                    |         |                                    |            |
|--------------------|---------|------------------------------------|------------|
| 1. Redsky          | DjKt-2  | 14. Makotchi Ded Dontipi - Duthie, |            |
| 2. Falcon Lake     | DkKt-2  | Bradshaw, Gould                    |            |
| 3. Lockport        | EaLf-1  | 15. Johnas                         | DkMd-11    |
| 4. Lockport West   | EaLf-2  | 16. Gainsborough Souris            |            |
| 5. Tulabi Falls    | EcKt-15 | locality                           | DgMg       |
| 6. River Mouth     | EcKx-37 | 17. Richards Village site          | DhLw-1     |
| 7. Wanipigow       | EgKx-1  | 18. Homer Davis                    | DjMf-6     |
| 8. Hamilton        | DkKt-17 | 19. Tailrace Bay                   |            |
| 9. The Forks       | DiLg-33 | 20. Gust, Smith Creek              | FbMf-1     |
| 10. Lac du Bonnet  | EcKx-3  | 21. Aschkibokahn                   | FbMb-1     |
| 11. Bink Moffatt   |         | 22. Sanderson                      | DhMs-12    |
| collection         | DhLq-5  | 23. Mortlach                       | EcNi-1, 10 |
| 12. Gordon Randall | DhLw-5  | 24. Goldsworthy                    | FdMw-1     |
| 13. Lowton         | DiLv-3  | 25. Loxinsky                       | FdNm-51    |

Figure 5.1. Locations of sites discussed in Chapter Five. Fine dashed line in lower right corner separates eastern and western Manitoba

**Table 5.2. Details of Sandy Lake ware found in the study area.**

Site	# of Vessels	Surface Finish	Shell Temper	Comments
Redsky (DjKt-2)	10	2 corded, 4 p.v.t.i., 4 oblit.	1 vessel	100s of sherds w different surface finishes; orange colouring
Falcon Lake (DkKt-7)	7? (Trottier 1973); 4 here	1 corded, 1 p.v.t.i., 2 oblit.	0	May be more SLW; associated with wild rice harvesting
Lockport (EaLf-1)	9 here; others	corded, p.v.t.i., oblit., smooth	1 here; more noted	There are likely many more SLW vessels at this site.
Lockport W. (EaLf-2)	unknown	corded p.v.t.i.	unknown	There are likely many SLW vessels from this site.
Tulabi Falls (EcKt-15)	5	p.v.t.i. smooth	1 or more vessels	Burns (1994) looked at the geochemistry of 1 SLW sherd
River Mouth (EcKx-37)	2	p.v.t.i.	0	large portions of both vessels are reconstructed
Wanipigow (EgKx-1)	8; likely more	6 p.v.t.i. 2 oblit. p.v.t.i.	at least 1	100s of vessels; associated with wild rice harvesting
Hamilton (DkKt-17)	1 or more	fine p.v.t.i.	0	interesting sparkly paste
The Forks (DILg-33)	2?	textile impressed	1 or more vessels	based on body sherds
Lac du Bonnet (EcKx-3)	1	p.v.t.i.	0	interior corner and inner rim decoration
W.H. Rand collection	1	oblit. p.v.t.i.	0	undecorated
Bink Moffatt (DhLq-5)	12	2 t.i., 5 oblit. t.i., 5 smooth	1 vessel	A large number of varied vessels are part of this collection.
Gordon Randall (DhLw-5)	37	corded, p.v.t.i., oblit., smooth	1 vessel	A large number of varied vessels are part of this collection.
Lowton (DiLv-3)	127 sherds	corded, p.v.t.i., oblit., smooth, check stamped	29 rims 26 vessels	Numerous shell tempered and other varied vessels
Duthie (DiMe-16)	6	1 p.v.t.i. 1 oblit. 4 smooth	0	Numerous vessels; many trailed and incised sherds; 'eye motif'; loop handled vessel
Bradshaw (DiMe-20)	2	p.v.t.i.	0	Two isolated vessels
Johnas (DkMd-11)	5	1 v.p.t.i, 3 oblit., 1 smooth	0	A varied collection of pottery
Gainsborough-Souris Locality	Snyder I Riverview Snyder II N Snyder Riverview 1	unknown # 17 1 p.v.t.i. 1 smooth 2 smooth	none noted at these sites	10 different sites in the Melita area; many Plains inspired vessels
Richards Village (DhLw-1)	2	p.v.t.i.	0	
Gould (DiMe-19)	1	corded	0	Surface-found with thick sherds, a Prairie Side-Notched point



Homer Davis (DjMf-6)	1	p.v.t.i.	0	
Tailrace Bay	Type A, B	p.v.t.i.	0?	Not physically examined
Smith Creek (FbMf-1)	several	p.v.t.i.	0	Swan River area; dated to between A.D. 1300-1400 (Meyer 1998)
Gust (FbMf-5)	several	p.v.t.i.	0	Swan River area; dated to between A.D. 1300-1400 (Meyer 1998)
Aschkibokahn (FbMb-1)	several	p.v.t.i.	0	May contain bone temper; not Duck Bay stamped or amorphous textile impressed (Selkirk)
Goldworthy (FdMw-1)	11	9 p.v.t.i. 2 smooth	0	Identified as Duck Bay ware Notched Lip and Undecorated types

p.v.t.i.-vertical parallel textile impressed

(Hill 1991) issued a halt to this disturbance, recommending that another location be chosen; unfortunately, much of the surface area had been disturbed. It was also noted that this large site likely has undisturbed contexts (Hill 1991) but it has not been tested. In October 1992, Hill (1991) returned to the Redsky site to check its condition, noting that no further disturbances were evident and that vegetation was reclaiming it. Along with the identification of Ash Rapids Corded pottery, there were also Raddatz, Laurel, Blackduck, Selkirk, and postcontact diagnostics (Hill 1991). The following artifacts were also collected: three projectile points (Raddatz, Plains Side-Notched, and Triangular), cores, uniface, bifaces, utilized flakes, debitage, many different lithic materials, a medium mammal rib fragment (slightly polished), two turtle shell fragments, brown glass, patterned porcelain pieces, and two clay pipe portions. After examining the artifacts from this site, the author noticed the Ash Rapids Corded vessels, which might be SLW (see Section 4.2.4 for more elaboration on this subject). Hence, the Redsky site was included in this thesis.

Having examined the many sherds from the Redsky site, 10 vessels have been identified as SLW (Figure 5.2). Table 5.3 outlines the pertinent details of each one. Other SLW vessels may have been present at the Redsky site, given that there is a plethora of thin, parallel vertical textile impressed or cord roughened body sherds. However, the 10 vessels have differing characteristics which allow the recognition of separate pots. Only one rim sherd has shell and fine grit temper (#145) with the rest containing fine grit; some body sherds have shell temper, presumably from the same vessel. Many pots have metallic fragments visible in the exterior, interior, or both portions of the walls. Two vessels are cord roughened, four are obliterated, and four are parallel vertical textile impressed. Five pots are undecorated, while one has decoration on the lip and four have interior impressions. Four of five sherds with decoration has displaced the clay, either vertically on the lip or horizontally to the exterior. Lip shapes have a tendency to be square, although five of them are deformed by decoration and two have slight

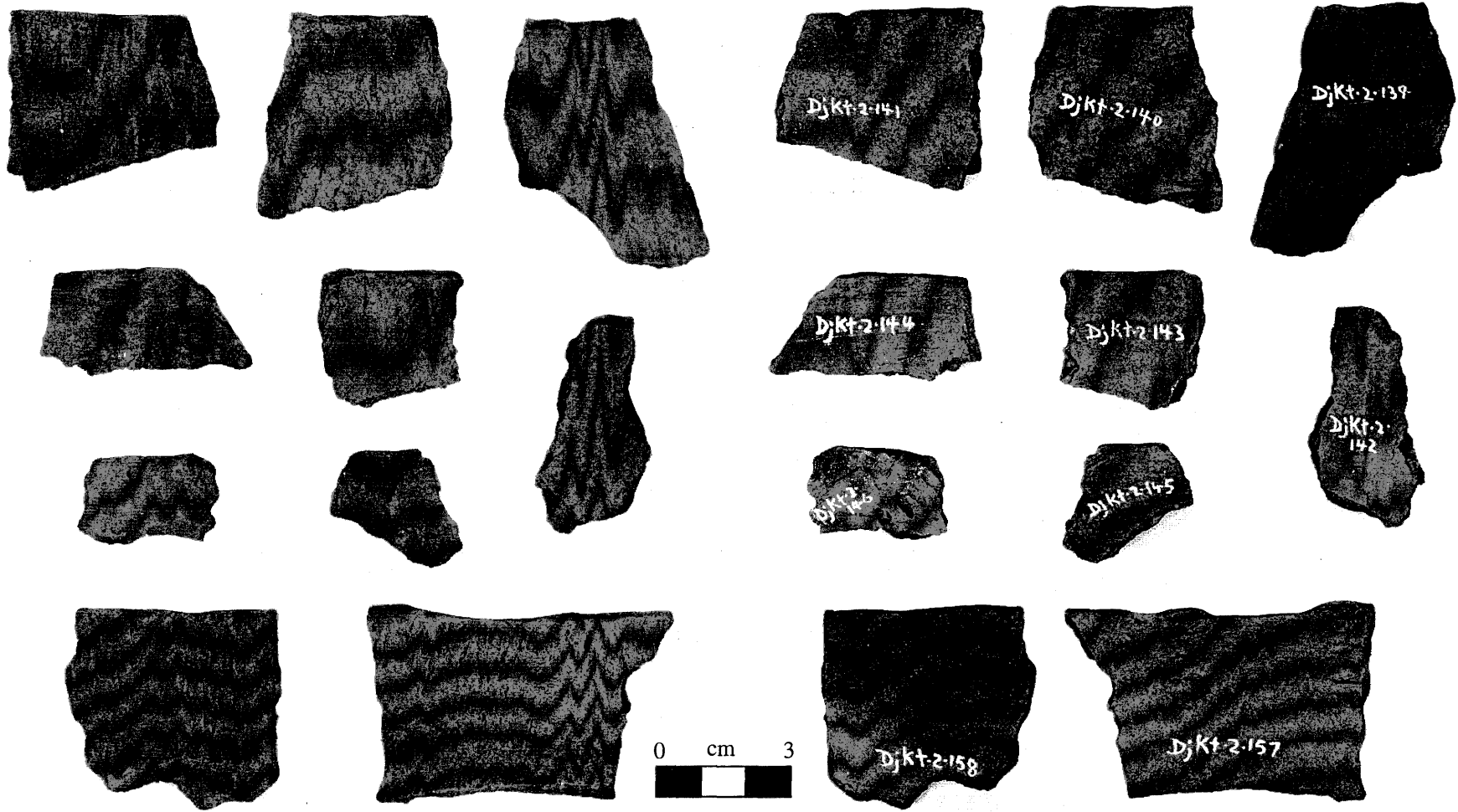


Figure 5.2. Ten Sandy Lake rim sherds from the Redsky site (#139-146, 157, 158). Exteriors to the left and interiors on the right. Number 145 (lower centre) is shell tempered.

**Table 5.3. Pertinent details about Sandy Lake ware vessels from the Redsky site.**

#	Ext. Surface Finish	Decoration (mm)	Decoration Location	Lip Shape, Finish	Thickness (mm) <sup>1</sup>	Neck
139	coarse v. corded	none	-	square, smooth	4.6-6.7-7.4	int. ridge; thickened
140 <sup>2</sup>	coarse p.v.t.i.	none	-	square, t.i.	6.4-4.1-4.5	curved; slightly thinned
141	oblit. p.v.t.i.	round dowel; 6.1 wide x 8.5 long	int. lip corner, ext. bulge; 18.5 between	square, oblit.	4.5-7.8-6.1	flat; thickened
142, 179	oblit. p.v.t.i.	none	-	ext. flange, oblit.	6.8-5.9-6.8	curved; even
143	oblit. p.v.t.i.	none	-	round, smooth	4.5-5.1-6.8	curved; thickened
144	oblit.	none	-	square, oblit.	6.8-6.9-ind.	thickened?
145 <sup>3</sup>	fine p.v.t.i.	l. oblique dowel tip or cord impressed?	lip top	ext. flange, oblit.	4.6-3.1-ind.	slightly thinned?
146	p.v.t.i.	r. oblique wide CWOI; 6.8 wide x 17.4 long	int. lip down; slight ext. bulge	square, t.i.	6.9-8.2-ind.	thickened?
157 <sup>4</sup>	fine p.v.t.i.	wide, widely spaced vertical CWOI; 10 wide x 22.6 long	int. lip down; slight vertical bulge on lip; 21.8 between	square, t.i.	7.3-7.8-6.2	curved, fairly short rim, slightly thinner
158	coarse v. corded.	pointed dowel, widely spaced; 1.7-5.9 wide x 12.2 long	int. lip down; slight vertical bulge on lip	square, oblit.	5.3-6.1-6.0	curved, slightly flared exterior, thickened

ext.-exterior

v.-vertical

int.-interior

p.v.t.i.-parallel vertical textile impressed

oblit.-obliterated

CWOI-cord wrapped object impressed ind.-indeterminate

l.-left, r.-right

<sup>1</sup>First number denotes max. lip thickness; second number is max. thickness at 20 mm below the lip; third number is the max. neck thickness.

<sup>2</sup>Near the neck, this sherd has the unusual orange stain discussed in this section.

<sup>2</sup>This sherd is shell and fine grit tempered; the rest are all fine grit tempered.

<sup>4</sup>All profiles are straight, although #157 and 158 have a ridged interior neck. Interiors are smoothed.

exterior flanges. Four vessels have thickened necks, while one is even with the lip, and two necks are slightly thinner than the neck (#157). Three sherds are not long enough to determine the difference between the lip and neck. Rim sherd #139 is similar to #158 in surface finish and paste but #139 has a definite inner neck ridge and the other does not. Number 140 is also fairly alike #157 in surface finish but the former is undecorated and has a flat neck; number 157 is decorated and has an exterior neck angle. Perhaps these vessels were made in a similar fashion or even by the same potter. Neck/shoulder sherd

#147 is a large piece with two marks on the inner shoulder, which may be two left oblique square dowel impressions. This sherd has a similar surface finish to #140 and 157, so it is not considered to be a different vessel. Six other neck sherds with parallel vertical textile impressed surfaces and very slight curvatures are present in the Redsky collection. Hundreds of body sherds were also collected by HRB personnel, although many are thicker, smoothed sherds likely being part of the Laurel vessels found at this site. However, about 200 body sherds are thin, textile impressed or cord roughened sherds which may have been part of the SLW or the thicker Blackduck pots. Like the rim sherds, these body sherds exhibit a variety of exterior surface finishes, including: coarse cord roughening, fine cord roughening, obliterated cording, sprang, and interlinking.

As a final comment about the pottery from the Redsky site, part of rim sherd #140 and many body sherds (about 15) were noted to have a bright orange-red colouring. The fragments are all thin, grit tempered, and parallel vertical textile impressed or cord roughened. These examples do not exhibit the colouring typical of oxidization. Although the author noted in Section 2.3.9 that there were problems with using this attribute for anything diagnostic, this colouring is unusual, so is noteworthy. This bright, iron stained look occurs on the interior, exterior, or sometimes on both of these surfaces. Some sherds have it appearing part way through the sherd. Thus, it is not likely an ochre coating, which would probably appear on one or both sides. The colouring is not as bright as red ochre typically is known to be, as viewed by the author on the Horizon site vessel described by Syms (1979). Another reason for discussing this idea is that one sherd from the nearby Falcon Lake site (#DkKt-7/M914 Accession A1996-8) also has this colouring and attributes previously mentioned. Three of 36 sherds (#DkKt-14/M13) from one catalogue bag from the Hamilton site (see Section 5.3.7) have a similar orange-red colour. Although these are also thin, grit tempered body sherds, their exterior surface finish is obliterated and they have a fine, sandy paste. Vessel #5 from the Wanipigow Lake site is also orange. Perhaps these colourings are related to a clay source in the

southeastern Manitoba area, or perhaps the people who made these vessels used a special firing procedure which caused the vibrant colours to appear. Clay source studies from this area would be useful to discover the potential cause of this unusual colouring.

**5.3.2 Falcon Lake (DkKt-7).** This multi-component site was formerly designated as C3-UN-35. It is located near the Falcon River outlet on the south shore of Falcon Lake (Trottier 1973:5) (Figure 5.1). The site was known locally as an old Native campsite, and found by a local collector after road construction impacted the site in 1956 (Trottier 1973:3). Trottier (1973:6) documented the first work at the site in 1971, when nine, 5 foot square units were excavated. In April and May, 1973, the Manitoba Archaeological Society conducted further excavations, of which part of unit 10 was discussed by Fread (1996). Fread (1996) indicated that they apparently continued excavations in Square 7, 8, 9, and opened 10 as well as 11. The components that have been identified because of diagnostics recovered at the Falcon Lake site are : Angostura, McKean, Parkdale Eared, Larter, Laurel, Blackduck, Selkirk, and SLW (Trottier 1973). Eastern Triangular, Prairie and Plains Side-Notched points were found in the protocontact levels (Trottier 1973:18-20) where SLW was recovered. Fread (1996:4) noted postcontact items and Avonlea points had also been recovered in Square 10.

As Trottier's (1973) and Fread's (1996) reports are not widely accessible, and there has not been anything written about the site, except for a listing in Participants (1987), the Falcon Lake site was included in this thesis. The collections housed at the Manitoba Museum of Man and Nature (MMMN) were accessible since some were catalogued and others were being processed. Other parts of the collection, such as that found at the Heritage Branch, could not be examined because it was loosely placed in unsealed small bags. The author did not want to transport them and there was not enough time to examine the huge numbers of artifacts placed loosely in these boxes. It is believed that these were the artifacts reported by Trottier (1973).

Trottier (1973:48-53) noted the presence of SLW at the Falcon Lake site, which he split into six decorative types, A through F. Generally, the ware has grit temper, vessels are globular and tend to be squat with well rounded bodies, and shoulders are not apparent (Trottier 1973:49-50). Trottier's (1973:50-52) types are summarized in Table 5.4. His (Trottier's 1973:48-53) types correspond to Sandy Lake Corded notched (vessel n=3) and plain (vessel n=3) variants. He noted a total of 36 rims and 86 body sherds of this ware, which represented 30 per cent of the pottery in the upper level (Trottier 1973:48, 63). This percentage is a significant number for a site in southeastern Manitoba. Trottier (1973:63) also noted that the SLW was associated with Winnipeg Fabric-impressed ware of the Selkirk 'phase' and small amounts of Manitoba Corded Blackduck ware. Another vessel, which Trottier (1973:52) called 'Type E Cemetery Point Corded?', has the exterior punctate row sometimes found on SLW from northwestern Ontario (Arthurs 1978). There was one partially reconstructed vessel excavated in 1971 from the Falcon Lake site (Trottier 1973:49-50). It is obvious from Trottier's (1973:26-31, 60) tables indicating artifact finds in units and levels that there was a fair amount of mixing at the Falcon Lake site. For example, some artifacts conjoin which were recovered in more than one level. Apparently, seven SLW vessels were identified by Trottier (1973) from this site.

Fread (1996:8) classified another three SLW rims and 11 body sherds from Levels A (0.0-2.0 inches) and B (2.0-4.0 inches) in Square 10. However, he did not indicate the catalogue numbers or how many vessels were there. Thus, the author examined the catalogued collections from the Manitoba Museum of Man and Nature with Accession numbers A1982-16 (#1-29), A1985-28A (Blight collection #30-188), A1992-3 (#M246-554?), and A1996-8 (#M555+?). Although only four additional vessels were found in this collection, substantial numbers of body sherds were also recovered. Along with Trottier's original seven vessels (Table 5.4), the total number of SLW pots at the

**Table 5.4. Trottier's (1973:50-52) types of Sandy Lake ware.**

Type	Surface Finish	Decoration	Lip	Equivalent Type
<b>A</b> <b>n=1?</b>	vertical cord marking to lip	interior lip edge in series of three (5.0 mm apart & 10.0 mm between each)	unthinned, flat, smooth	Sandy Lake Corded notched
<b>B<sup>1</sup></b> <b>n=1</b>	vertical cord marking to over lip	interior, slightly oblique, lip edge in series of three (10.0 mm long and 3.0 mm wide); three notches are spaced 40.0 mm apart	cord marked	Sandy Lake Corded notched
<b>C</b> <b>n=2?</b>	vertical cord marking to over lip	none	slightly thickened, obliterated cord marked	Sandy Lake Corded plain
<b>D<sup>2</sup></b> <b>n=1</b>	vertical cord marking to lip	none	cord marked	Sandy Lake Corded plain
<b>E<sup>3</sup></b> <b>n=1</b>	vertical cord marking	row of exterior punctates/interior bosses 12.0 mm below lip	obliterated	Sandy Lake Corded
<b>F</b> <b>n=1?</b>	obliterated vertical cord marking	none	slightly thickened	Sandy Lake Corded plain
<b>n=7</b>				

mm-millimetres

<sup>1</sup>The measurements for this vessel are listed in Table 2.1.

<sup>2</sup>Trottier (1973) noted that these small sherds may be part of Type A.

<sup>3</sup>Cemetery Point Corded? was the type name used by Trottier (1973).

Falcon Lake site is 11. Re-examination of the original excavated material may indicate more SLW vessels but this was not possible as already outlined.

The author was able to reconstruct a few more pieces of some vessels from the Falcon Lake site (e.g. #DkKt-7/M287 A1992-3). Three SLW pots, alluded to in Fread (1996; no catalogue numbers were given), were identified with the addition of another vessel (Table 5.5). These four SLW vessels, together with the original seven (or more) identified by Trottier (1973), indicates a total of 11 at the Falcon Lake site.

A thorough examination of the available pottery from the Falcon Lake site, even the body sherds, was completed to see if there were any unusual temper or surface finishes. Particularly noteworthy is the identification of another vessel (#M246), similar to one described by Trottier (1973) with triad zoned notches on the interior (Table 5.4; Figure 5.3).

From the artifact and faunal recoveries it is evident that the Falcon Lake site was a



**Table 5.5. Other Sandy Lake ware from the Falcon Lake site.**

#	Location (inches)	Surface Finish	Decoration (mm), Location	Lip Shape, Finish; Neck	Thickness (mm) <sup>1</sup>
DkKt-7 /M246 A1992-3 Picnic <sup>2</sup>	Square 10; 0-1 in. depth; 24 in. N, 6 in. E from SW post	partly oblit. p.v.t.i.	series of 3 int. oval vertical dowel imp. (8.1 long x 6.5 wide) on lip/corner; slight ext. and vertical lip bulges; about 20+ mm between series	square, but deformed; oblit.; ridged interior neck	7.5-6.4-6.5
DkKt-7 /M247 A1992-3 Picnic	Square 10; 0-1 in. and 2 in. depth (2 glued together)	vertical cord marked	continuous int. square dowel imp. (4.4-8.3 long x 2.6 wide; slight vertical displacement of clay on lip)	square; corded; slightly ridged neck	3.6-5.5-5.8
DkKt-7 /M287 A1992-3 Picnic (n=8) <sup>3</sup>	Square 10; 3 in. depth; 23N x 5E from SW post	oblit. p.v.t.i.	oval dowel imp. (4.5 long x 8.7 wide) on int. corner; small dowel imp. on lip surface (4.0 long x 2.5 wide)	square; smooth?; rolled int. neck	6.5-6.6-7.5
DkKt-7 /M848 A1996-8	Square 12; 4 in. depth; 11.5E x 5.5S from NW post	p.v.t.i.	none, but lip is absent	square?; indeterminate;	lip is absent, but near rim is 5.5-?-7.8

in.-inches

p.v.t.i.-parallel vertical textile impressed

oblit.-obliterated

int.-interior

ext.-exterior

-All vessels are grit tempered and thin with straight rims.

<sup>1</sup>Picnic seems to indicated a different part of the excavation (?) and is written on all artifacts from Accession # A1992-3.

<sup>2</sup>First measurement is maximum lip thickness, while the second is the maximum measurement at 20 mm below the lip; the third number is the maximum neck thickness.

<sup>3</sup>Only one rim sherd is part of this reconstruction, so decoration is not easily discerned. The other sherds are from the neck and shoulder/body.

habitation site where people relied on fishing and the hunting of all sizes of mammals and several birds (Trottier 1973:64). It is most likely that the different groups of people who occupied the site, particularly as represented by later components, were harvesting wild rice at nearby locations. Both local and non-local lithic materials indicate that that the people living at the Falcon Lake site were obtaining or trading a wide variety of materials, such as: basalt, quartzite, arkose, quartz, cathead chert, West Patricia Recrystallized chert, Knife River flint, Lake of the Woods black chert, gunflint jasper, schist, Bird River quartzite, and Jasper taconite. Trottier (1973:62) suggested that the Falcon Lake site might have been an overnight camp used by inhabitants on their way to gather this plant

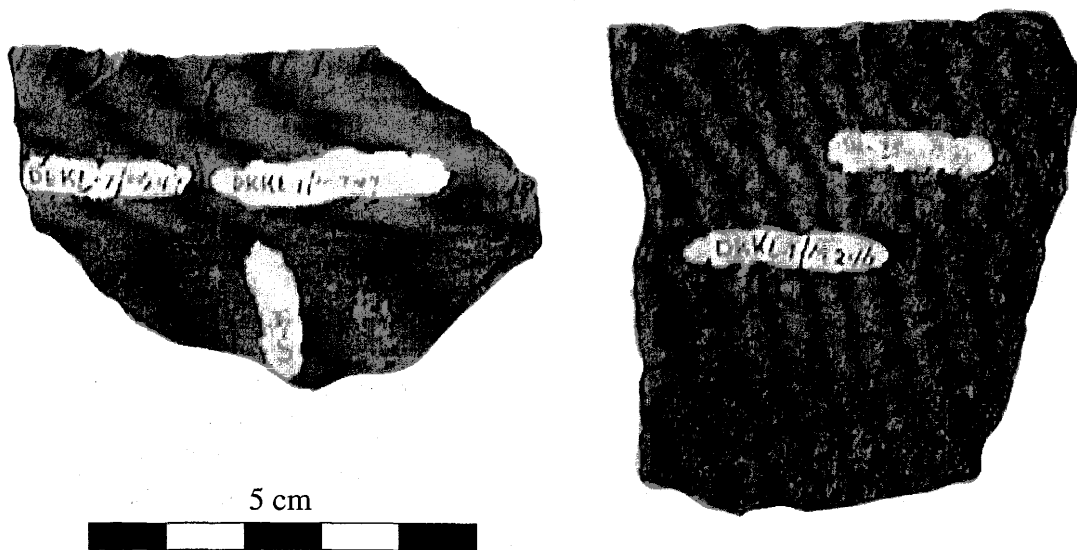


Figure 5.3. Two rim sherds (#247 and #246), exhibiting interior notched impressions, from the Falcon Lake site in southeastern Manitoba. Sherd #247 has continuous square to rectangular dowel impressions and #246 has a zoned triad of round dowel impressions.

food. The connection between SLW and wild rice harvesting has already been demonstrated in Section 3.5.1.

Three sherds (#M40, 166, M914 A1996-8) from the Falcon Lake site have the orange colouring, discussed in Section 5.3.1 that is found in southeastern Manitoba. They are thin, parallel textile impressed sherds. Many Falcon Lake body sherds of this description are catalogued as SLW.

**5.3.3 Lockport (EaLf-1) and Lockport West (EaLf-2).** This multi-component habitation site is located along the Red River near the town of Lockport, Manitoba (Figure 5.1). This site has been known to Euro-Canadians for over 100 years, with several burial mounds being recorded by early, notorious ‘explorers’ of these structures: Reverend George Bryce, Donald Gunn, C.N. Bell, and Professor Henry Montgomery (MacNeish 1958:14-15). Dr. Tyrell of the Geological Survey of Canada was one of the first to mention the Lockport village, followed by W.B. Nickerson (Capes 1963), Mr. Rand, Walter Hlady, and Thad Hecker (MacNeish 1958:14-15). Numerous articles have been written about various aspects of the Lockport site, beginning with a grave reported by Vickers (1951:5, 6), MacNeish’s excavations (1958:13-26), and more recent archaeological research projects from 1984-1988 (Buchner 1986; Flynn 1993). Unfortunately, this important site is being lost a little at a time each year, due to river erosion (Flynn 1993).

One of the most fascinating aspects of the Lockport site is that it is one of the only sites in western Canada that contains evidence for a horticultural component. This information occurs in the form of bison scapula hoes, recovered maize kernels (Deck and Shay 1992:38-39), and storage pits (MacNeish 1958:18). Berries, seeds, and nuts were also gathered as evident from paleobotanical remains (Deck and Shay 1992:38-39; MacNeish 1958:23).

Several radiocarbon samples have been assessed for this site (see Buchner 1988:29) indicating a range of occupation between B.C. 365-A.D. 1840 or later. The

identified components include Selkirk, a horticultural group related to the Initial Middle Missouri variant or Oneota, Blackduck, Laurel, and Larter (Buchner 1988:28; Flynn 1993). Northeastern Plains Village ware is also present at the site. It has been noted previously that SLW is present at the Lockport site (Flynn 1993:8; Dave Hems and Tony Buchner in *Participants* 1987:61).

Flynn and Kogan (1991) presented a detailed study of some pottery, particularly studying paste, from the Lockport site. Although they did not deal with SLW in that paper, they used two categories called 'Grainger ware' and 'other', which may indeed contain SLW. This case is likely since there are shell tempered vessels identified in Grainger ware (Flynn and Kogan 1991:65). It is described as having castellated rims caused by deep cord wrapped tool impressions on the lip (Flynn and Kogan 1991:43), that seem to resemble SLW with that decoration (e.g. Figure 5.4). Other attributes described for this ware include unthickened rims and straight profiles which are unlike Blackduck (Flynn and Kogan 1991:43) but are similar to SLW. However, the other decorations described for Grainger ware are widely spaced, vertical cord impressions and long, rectilinear punctates (Flynn and Kogan 1991:43) which are not known on SLW.

Although the majority of the pottery from this site is in the possession of Catherine Flynn, who is researching it for her Masters thesis, some collections from the Lockport site were viewed by the author. One collection, from the MMMN, was examined and it was determined that a large majority of it was SLW. Another smaller collection from the Lockport site is housed at the same museum. There were four catalogue entries, as recorded by museum staff member B. Greco, listed as SLW: M458, M658, M659, and M707. The only information available is that they were collected at the Lockport site, with the collection method being unknown. Also, the first three sherds had been pulled from the collection, so the author was not able to view them. However, these were all described as 'molded' (textile impressed) lip/neck sherds of about the same size.

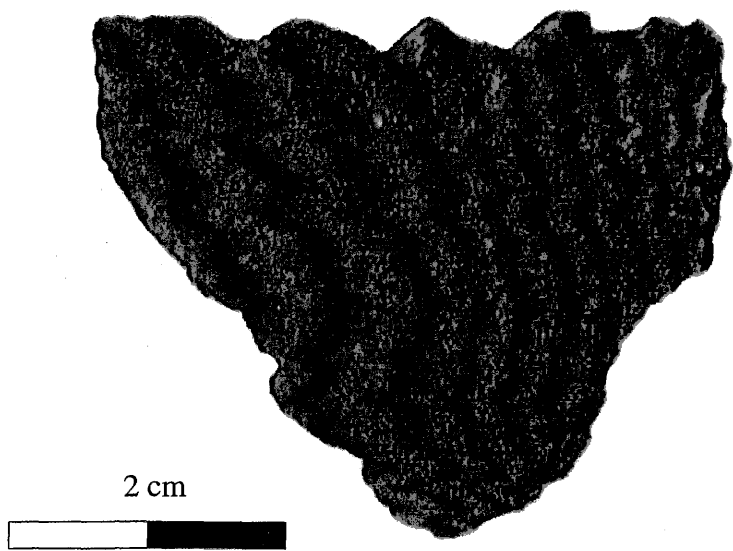


Figure 5.4. Interior of Sandy Lake ware rim sherd #510 (A50-4488) from the Wanipigow site, southeastern Manitoba. This crimped lip decoration is common on Sandy Lake ware from Minnesota.

The last sherd, M707, is a large rim/neck sherd of a shell tempered vessel. Other than these four pots, the author identified another 13 rims/vessels which are likely SLW (Table 5.6).

The purpose of identifying SLW vessels at the Lockport site was not to provide a percentage of the total numbers of pottery at the site, because the considerable number of collections made over such a long time precluded this possibility. Flynn is researching part of the large artifact collection, so clearly it would not be a manageable task as part of another thesis. Rather, identifying individual vessels merely confirms the presence of SLW at the Lockport site by providing descriptions of a few of them. The author also wanted to see if this SLW was different from that in other sites in Manitoba, since the Lockport site has a horticultural component. Apparently, this does not seem to be the case as both smoothed and corded/textile impressed along with plain and notched rim sherds were observed in the collections.

Another important aspect of the Lockport site is its connections with other sites. Thus, Flynn (1993:8) proposed the Red River complex which can be identified by:

relatively small villages with bell shaped storage pits, scapula hoes, some reliance on maize horticulture without evidence for beans or squash, and heavy reliance on fauna such as fish and bison. Ceramics consist of locally manufactured vessels with Oneota related motifs such as trailed or incised chevrons and falcon tail patterns. These ceramics are part of a ceramic assemblage which also contains local ware types such as Rainy River or Sandy Lake. While bearing certain resemblances to the Middle Missouri Plains Village pattern, this complex should not be regarded as derivative; it is distinct from this pattern although the ultimate origins of both may be similar.

Coincidentally, at about the same time, Michlovic and Schneider (1993) were also formulating the Northeastern Plains Village complex (as discussed in Section 4.2.7), which encompasses the same attributes except it has fewer Rainy River complex vessels. There are apparently more sites having all of these criteria along the James/Sheyenne Rivers in the Northeastern Plains Village complex (Michlovic and Swenson 1998). Since only the Lockport site fits all of the criteria in the northern Red River area (proposed to be

**Table 5.6. Samples of Sandy Lake ware from the Lockport site.**

#	Surface Finish	Lip	Neck	Decoration	Thickness (mm)
M689	oblit. t.i.	ext. flange	?	none	6.8-5.3-?
M458	listed <sup>1</sup>				n/a
M673	smoothed	int. flange	thickened	none	6.1-7.1-7.3
M681	p.v.t.i.	square	even	perpendicular CWOI on lip	8.2-5.1-7.9
M658	listed				n/a
M659	listed				n/a
M695	smoothed	square	slightly thinner	none	6.2-5.0-4.8
M704	p.v.t.i.	square	thickened	l. oblique trailed on lip	5.3-6.4-6.5
M707 <sup>2</sup>	right oblique corded or rolled cord	near rim	slightly thickened	none	5.1-4.5-6.1
<b>Total</b>					<b>9</b>

<sup>1</sup>Listed in the MMMN catalogue as Sandy Lake ware but unavailable for analysis.

<sup>2</sup>shell temper

p.v.t.i.-parallel vertical textile impressed

CWOI-cord wrapped object impression

int.-interior

the Red River complex), it might be less complicated to include the Lockport site with the Northeastern Plains Village complex as a northern outlying settlement. One explanation for the apparent lack of sites along the Red River in Manitoba was suggested by Ebell (1988:20), who proposed that it was a place of mutual avoidance (a.k.a. 'no man's land') during the postcontact and possibly precontact time periods. Ebell (1988:20) proposed this idea, particularly for the area between The Forks (where the Assiniboine/Red Rivers join) and where the Rat and Red Rivers meet south of present day Winnipeg, after surveys of the area yielded few sites, and these had minimal time depth. Future research may indicate more components like Lockport and Lockport West along the Red River and a complex of the same name might be maintained.

**5.3.3.1 Lockport West (EaLf-2).** Of related importance is the Lockport West site (EaLf-2), which has some SLW and is located on the opposite side of the Red River, across from the Lockport site (Dobson and Whaley 1997:7) (Figure 5.1). It was first recorded by G. Hill, an archaeologist with Manitoba HRB, who investigated the site after grading exposed many layers of artifacts in 1992 (Dobson and Whaley 1997:8). Salvage excavations took place at the Lockport West site because it was threatened by a river bank

stabilization plan (Malainey 1997:253). In 1995/1996, a linear trench of 1 m deep and 2 m wide was excavated. Four Eastern Triangular and three Plains Side-Notched points were recovered (Dobson and Whaley 1997:9). Other recoveries included eight end scrapers, six bifaces, a pecked tool, fishnet sinkers, and 19 bone tools including a needle, awls, as well as spatulas (Dobson and Whaley 1997:10-11). Malainey (1997:253) noted that Catherine Flynn has described the pottery from Lockport West as having similarities to that of the horticultural component from the Lockport site. Dobson and Whaley (1997:12-13) described the pottery from Lockport West, numbering 95 rim sherds, as being possibly Laurel, Blackduck, Red River complex (as defined by Flynn 1993:7), and Mandan or 'Upper Missouri'. Red River complex pottery is represented by textile impressed pottery with simple decorations located on the lips (Dobson and Whaley 1997:12).

Since Gord Hill was in the process of cataloguing/analyzing this collection, and another student was going to examine it for a project, the author was not able to study it in detail. Hill (personal communication, 1998) has noted that two of the small bone tools found at the site could have produced the decorative impressions found on some of these sherds, allowing for clay shrinkage (Dobson and Whaley 1997:14). These findings suggest that these vessels were manufactured at the Lockport West site. However, after briefly examining this pottery, it was noted that a large majority of this collection contained SLW, both plain and notched variants. Numerous types of tool impressions on or below the interior vessel lips were noted by the author (shown in Dobson and Whaley 1997:15). Many of the rims are thin, straight, and often have surface finishes that are smooth, obliterated, or parallel vertical textile impressed (corded). While it is not possible for the author to provide a total number of SLW vessels at the Lockport West site, it is evident that many of these rim sherds should be identified as this ware.

Malainey's (1997:201) chemical analysis of sherd residues from the Lockport West site indicated that three of eight sherds had large herbivore processed in these pots,



while one had this substance and plant or bone marrow. Given that this site is found in the Parkland environmental zone, this large herbivore meat was probably bison, as evident from faunal remains from the site. Four sherds from this site had fish/corn signatures, which emphasizes that the occupants likely ate fish and possibly corn.

**5.3.4 Tulabi Falls (EckKt-15).** This multi-component site (previously known as C3-UN-109) is located on a prominence between the east end of Bird Lake and the southern part of Tulabi Lake (Burns 1994:10) (Figure 5.1). With the exception of a listing in Participants (1987:61), which has no details regarding the SLW, other articles which stated that this site had that ware (Burns 1994) are not easily accessible. Therefore, the author decided to examine some of the sherds from this site, since one vessel was shell tempered and wild rice grows nearby (Burns 1994:17, 142).

Most recoveries from the Tulabi Falls site came from 18 one foot square test excavations (Burns 1994:10). Phosphate analysis of soil, suggesting the former presence of bone and ash, indicated a strong reaction in a very large area; thus, the site is probably quite large (Burns 1994:14). Although the site has Archaic and Oxbow components, there are literally hundreds of vessels represented by pot sherds (Burns 1994:15). See Sections 2.3.5 for information about Burns' (1994) geochemical tests on sherds from the Tulabi Falls site.

The following catalogue numbers from the Tulabi Falls site were listed as being SLW by an MMMN employee: M3134, M3135, M3137, M3362 (partially reconstructed pot with vertical textile impressed exterior and notching), and M3136 (thin sectioned sherd used in Burns 1994:9). Unfortunately, only one of these sherds was available for analysis (M3134) and part of vessel 53, which is part of the same pot as M3136. The author also added number M3332 which was located while examining the rest of the collection. Thus, there were originally five catalogue numbers from the Tulabi Falls site which were catalogued as SLW, of which at least two were from the same vessel. With the author's determination of another sherd, the total is five SLW pots.

Vessel number 53 (EcKt-15/M3134; Accession #A1987-14) from the Tulabi Falls Portage site is represented by one SLW rim sherd and 2 rim/neck sherds glued together (UN109-8B or V53; UN109-817, UN109-2A). This vessel has a vertical textile impressed surface which has been partially burnished. One rim sherd that was examined is parallel vertical textile impressed but it has almost like a burnished sheen on top of the highest cord impressions; some shell is visible in the cross section of this rim sherd. The exterior is undecorated and the interior has vertically placed oval cord wrapped object impressions, so as to produce a bulge on the exterior (extends down 9.9 mm). This same kind of crimped decoration appears on the inner rim (begins at 18.4 mm below lip top and ends 26.0 mm but is broken just below the bottom of the decoration). It is 9.4 mm between centre to centre of each decoration, both on the lip and rim. The maximum thickness at the lip is 3.9 mm and the minimum thickness is 2.1 mm. It is lightweight and there is an even thickness between the neck and lip.

EcKt-15/M3332 (Accession #A1987-14; UN109-6A and 15 glued together; UN109-4A) from the Tulabi Falls Portage site is a miniature vessel represented by three rim sherds. It is smoothed and has a straight profile which is thickened. The lip is rounded and is 4.1 mm thick, while the maximum thickness is 4.5 mm. M3332 has generally a rough texture generally. This vessel was noteworthy because it so small and finely made; it also has the attributes of undecorated SLW.

Clearly, from the pottery found at the Tulabi Falls site, there have been people occupying this location for hundreds of years. People making SLW were only one of many visitors to this location.

**5.3.5 River Mouth (EcKx-37).** This site (a.k.a. SPIT 96) was found by Ray Tuokko, an avocationalist, and recorded in 1987 by Gord Hill from HRB in Winnipeg (Hill 1992:1). Over the next few years, Hill (1992) continued monitoring and testing the River Mouth site with other HRB employees, since parts of it were being eroded by the Lac du Bonnet reservoir, created because of Manitoba Hydro's dam at MacArthur Falls.

It is near the Lee River and 21 km northeast of Lac du Bonnet, Manitoba (Hill 1992:1) (Figure 5.1). The River Mouth site contains artifacts representative of Oxbow, McKean, Larter, Laurel, Blackduck, and possibly Selkirk components (Hill 1992). Large portions of one vessel (Figure 5.5) and some pieces of at least one more were recovered about 5.0 m away from a human burial (salvage excavation made by Gord and K. David McLeod from Manitoba HRB on September 30, 1987). One porcellanite endscraper, six obsidian flakes, and four dark grey chalcedony flakes were recovered in conjunction with the sherds.

Large portions of Vessel #1 were refitted, mostly by Gord Hill, and some portions by the author (Figure 5.5). It is estimated that three-quarters of the pot was recovered by Hill, although not all of the sherds have been conjoined, due to their fragile nature. Vessel #1 is thin, ranging from 6.5 to 7.5 mm at the lip.

The exterior of Vessel #1 from the River Mouth site has fairly evident, vertically oriented textile impressions which alternate direction near the base of the vessel. David Meyer (personal communication, 1999) suggested that this vessel may have been made in a textile bag, due to the extreme thinness of the walls. Small undulations occur all over the inside, perhaps as a result of pressing the clay into the bag, or because an anvil was used on the interior. The lip interior was decorated with cord wrapped object impressions at an left oblique angle. A similar example of this idea is the Jamestown Mound partially reconstructed vessel (Figures 2.6, 2.7) where the only decoration is interior punctates/exterior bosses. That vessel is also vertically textile impressed, likely made in a bag, as it would have been easier for the potter to decorate the interior. At about 13.8 mm below the lip of the River Mouth Vessel #1, there is a row of exterior punctates (3.4 mm diameter) with corresponding interior bosses which are about 15 mm apart. The textile that the pot was made in may have been rolled back just enough to decorate it. This



Figure 5.5. Partially reconstructed Vessel #1 from the River Mouth site, southeastern Manitoba. The large portions are not glued together, since they are so thin and fragile. Note the parallel vertical textile impressed surface finish, row of exterior punctates/interior bosses, and the interior oblique cord wrapped object impressions.

attribute is characteristic of the Clearwater Lake Punctate type of Winnipeg Fabric-impressed ware decoration (Hlady 1971; Meyer 1978; Rajnovich and Reid 1978) but most of the other attributes do not conform. Rather, all of the other characteristics are typical of SLW, particularly of the northwestern Ontario examples as described by Arthurs (1978) (see Figure 2.14).

Vessel #2 from the River Mouth site consists of three glued rim sherds and many reconstructed sections of neck, shoulder, and body sherds. It has a square to slightly rounded lip and is undecorated. While the rims sherds are slightly incurvate to straight, the overall vessel shape is a squat, bowl shape with the neck barely visible. The exterior surface finish is parallel vertical textile impressed and smoothing lines are visible on the interior. Dimpled marks on the interior probably represent anvil impressions. A beginning to the textile bag top is visible about 3 mm down on the exterior rim. The grit tempered paste is crumbly in places and laminations are visible in cross section. Vessel #2 from the River Mouth site ranges in thickness from 5.4 to 7.8 mm at the lip, and is about 6.5 mm on the gradually thickening neck. The walls are slightly wider than those of the other vessel from this site. Lighter coloured spots, which may be from water, are found on the interior. Black charring is present on the exterior.

Given that the pottery and lithics from the River Mouth site were found so close to human remains, it is likely that they are associated with the burial. The excellent quality of the pottery and traded obsidian were probably valuable objects to the people who left them behind at the River Mouth site.

**5.3.6 Wanipigow Lake (EgKx-1).** EgKx-1 (Figure 5.1) is located near the town of Bissett, Manitoba which is about 170 km northeast of Winnipeg. It is actually a series of sites (Table 5.7) produced by subdividing EgKx-1 (Saylor 1989; Zoltai 1989a). MacNeish (1958:48) recorded one site on Wanipigow Lake, although this may not have been EgKx-1 (Saylor 1989). The first test excavation, by Professor Charles Amsden of

**Table 5.7. Divisions of the EgKx-1 locality (after Saylor 1989; Zoltai 1989a).**

Site Area Subdivision	Detailed Description of the Site Area
<b>Cabin Point Area</b>	Northernmost and most recently opened excavation extension; at least 1.75 ha of known artifact distribution (Zoltai 1989a); separated by the marsh
<b>Wanipigow Lake Area</b>	Beach and the adjacent interior portion behind it; divided into three topographic and soil zones
a)W. L. Knoll	A rounded spit at the eastern end of the beach
b)W.L. Beach	Sandy subsoil overlain by organic accumulations
c)W.L. "Interior Zone"	Shallow trench behind the beach
<b>Hollow Water Area</b>	Western end of EgKx-1
a)H.W. Meadow	Borders the W.L. Beach and Beach/Interior subdivisions; severe disturbance
<b>Carlor Area</b>	Easternmost portion of the site

the University of Manitoba, occurred in the early 1970s (Saylor 1989:1). In 1975, Stan Saylor led a salvage excavation that took place along an eroding bank at the western end of the site. Large crews conducted more formal excavations at EgKx-1 in 1976 and 1977 (Saylor 1977, 1978a). Units were excavated to an average depth of 70 cm, and a total of 67.5 m<sup>2</sup> were excavated (Malainey 1997:255). This resulted in studies of soil (Zoltai 1989b), Laurel pottery (B. Saylor 1989), Blackduck pots (Carmichael 1977), and Selkirk textile impressions (Saylor 1978a) but a complete analysis of the site findings is not available (Malainey 1997:255). Hambly (1994:10) discussed projectile points from the Wanipigow site, noting that 12 triangular, three Plains and 10 Prairie Side-Notched points were found with Selkirk/Sandy Lake pottery. Given that SLW is recognized in this pottery collection (Meyer and Hamilton 1994:124; Participants 1987:61), the author examined some of it to provide examples of the ware from this site. It should be noted there are still a large number of Selkirk or Winnipeg River complex vessels. Saylor (1978b:8) noted that SLW was found in direct association with Selkirk at the Cabin Point portion of this site, which was intriguing. Some of the limitations discussed in Section 5.2 are applicable to the Wanipigow site artifacts, which is why a complete analysis of all SLW/Selkirk was not undertaken. Studying the hundreds of vessels and thousands of sherds from this site would entail a thesis on its own, although it would be advocated by this author as a worthwhile project.

According to S. Saylor (1989), *Wanipigow* was said by some elderly local Native residents to mean 'hollow water' or 'hole in the water' but it is further explained in the following passage:

One legend states that on rare occasions a certain river flowing west from the country of many hills to the great lake ran into a hole and disappeared. Another states that when the wind on Lake Winnipeg blew from the south for prolonged periods, the first rapids or falls up the Wanipigow River occasionally formed a whirlpool, caused by the drop of water near the mouth of the river as the lake's water shifted northward. Some people have said that Wanipigow is the land where the Thunderbird nests; others, that their ancestors used to journey to the lake for visions. Many people have said that the lake was once rich in rice (S. Saylor 1989:1).

Zoltai (1989a:66) also noted that wild rice sources are located near EgKx-1, and his paleobotanical studies indicated that grains of this plant were recovered from the excavations. In fact, it has one of the largest recoveries of wild rice grains from any site in the areas where SLW is found (Figure 3.1). Thus, many of the peoples who lived at the Wanipigow site area were likely harvesting rice. However, unlike many of the ricing sites in Minnesota (see Section 3.5.1), there is no apparent evidence of harvesting such as parching pits or jigs. Zoltai (1989a) also identified several other plant species which were likely gathered by the inhabitants of this site.

It is likely that the Wanipigow site was a gathering place where people met to harvest wild rice and to hunt aquatic or terrestrial mammals, which might explain the long extent of time and wide areal extent of this group of sites. Fishing was likely a typical activity, given the many lake and rivers in the area of Wanipigow Lake. Grainger (1980; quoted in Malainey 1997:256) noted that over 90 per cent of the faunal remains from the Cabin Point part of the site were mammalian of large, medium, and small sizes. Water dependent mammals were also well represented in the assemblage, as were a few bird and turtle bones (Grainger 1980). This faunal assemblage is typical of sites found in the Boreal Forest environmental zone.

Malainey (1997:255) analyzed residue from 15 sherds from the Cabin Point section of the Wanipigow site, where many of the SLW sherds listed by the author were

found. Her results indicated: two sherds with large herbivore (probably moose), three with plant, three fish and plant, two fish/corn, and five with beaver residue signatures (Malainey 1997:201). Although these results are typical of the faunal recoveries from archaeological sites in the Boreal Forest, consisting of a minimum number of 18 beaver and some moose remains (Malainey 1997:256), the plant and fish residues provide more information. Since only 1.2 per cent of the faunal remains from Cabin Point were identified as fish, specifically sturgeon (Grainger 1980), Malainey's (1997:256) identification of five of 15 (33.3 per cent) residues as fish would seem to indicate a greater importance of this resource to the inhabitants than suggested by archaeological recoveries. Naturally, the acidic soils in many forest sites or small size of fish remains might explain this paucity of faunal remains.

The author viewed all of the vessels in the special collections at the Manitoba Heritage Branch repository. Most of these were partially reconstructed vessels (e.g. those used by B. Saylor 1989), although there certainly were many smaller rim sherds. Essentially, a large number were selected to provide examples of SLW at the site, since no one has indicated specific vessel numbers of this ware. The author looked through some of the 20 or so boxes of loose sherds (n=hundreds) but this did not seem like a productive activity. Thus, the information below presents a representative sample of some SLW from the Wanipigow site, from different portions of the area (Table 5.8).

Particularly interesting was the identification of a Sandy Lake vessel with a crimped lip (discussed in Section 5.3.3; Figure 5.4). Peterson (1986) also noted this type of decoration in her SLW samples from Minnesota as did Hanna (1982), who described some Duck Bay ware as having this lip elaboration. Vessel #158 (A50-814) has shell temper, which has partially disappeared leaving holes in the rim sherd. Thus, eight SLW vessels were identified at the Wanipigow site, although there are most assuredly more from there. Table 5.8 provides a representative sample of SLW from the Wanipigow site.



**Table 5.8. Samples of Sandy Lake ware from the Wanipigow site.**

#	Surface Finish	Lip	Neck	Decoration	Type
A50-1-no #	p.v.t.i.	round	even	int. r. oblique CWOI	Corded
A50-1-729	p.v.t.i.	square	ridge	int. r. oblique oval tool imp.	Corded
510-A50-4488	p.v.t.i.	deformed	even	int. imp. causing crimped lip	Corded
V. 285 A50-2258 etc.	p.v.t.i.	square	even	none	Corded
V. 278-C.P. A50-1809 etc.	p.v.t.i.	square	thickened	int. l. oblique tool imp.	Corded
V. 302	p.v.t.i.	round	indeterminate	none	Corded
V. 282 A50-1627	oblit.	square	thickened	int. r. oblique tool imp.	Oblit.
V. 511 A50=4360	oblit. p.v.t.i.	square	thickened	int. r. oblique CWOI	Oblit.
<b>Total</b>					<b>8</b>

p.v.t.i.-parallel vertical textile impressed  
int.-interior  
CWOI-cord wrapped object impression  
C.P.-Cabin Point

oblit.-obliterated  
r.-right; l-left  
imp.-impressions

**5.3.7 Minor Occurrences.** Some minor occurrences of SLW, for example one or two vessels, were discovered during the process of examining the many collections (Table 1.2). These samples warrant mentioning in this thesis but the small amounts and lack of information did not really necessitate a lengthy report. The author agreed with one of Hartlen's (1996a:12) main objectives: "it is hoped that this examination will illustrate the importance of analyzing 'forgotten' collections." While some of these artifact groupings may be small, or there is not much locational information, they are still useful for a regional study such as this one.

At least one vessel from the Hamilton site (DkKt-17) is likely SLW. This site is located in the same borden unit as the Falcon Lake site. Brock Hamilton donated the artifacts, which are listed as DkKt-17/M1-M16 (Accession A1993-14) and M17-44 is under Accession A1995-17. Numbers M11 (n=22) and M15 (n=2 glued together) seem to be from the same pot, which is probably SLW. The author noticed the similarities between it and the SLW vessel from Minnesota that is housed at the MMMN (A73-1/M2

Accession No. A73-1). Both pots are very thin, have a fine, vertically oriented corded surface finish, and are alike in profile. The sherds from the Hamilton site pot range from 3.4 to 6.4 mm thick. It has a sparkly paste, since it is smoothed so much on the interior that grit particles are revealed.

Three of the 36 sherds in DkKt-17/M13 have the orange-red colour like other sites in this area (Section 5.3.1). These sherds are also thin and obliterated textile impressed but there are no rim sherds in this catalogue number. The sherds have a fine sandy paste. Other objects found at this site include: one partially reconstructed Rainy River composite vessel (looks like Blackduck without punctates), one partially reconstructed Blackduck vessel, about three other Blackduck vessels represented, one likely Laurel plain vessel, flakes, retouched flakes, metal Tetley tea lid, burnt and unburnt bones of large and medium mammals (n=113 pieces), and FCR.

Mary Ann Tisdale indicated to the author (personal communication, 1999) that there was some SLW at The Forks site (DILg-33), because some body sherds contained shell temper. K. Shearer, of the MMMN, catalogued five body sherdlets or small sherds (#90D/M279-Unit 20, Row D, Level 3) and five other body sherdlets from this site (#90D/M291-Unit 20, Row D, Level 3) as being SLW; it is not indicated if the sherds were shell tempered, which may have been the reason for identifying this as SLW. These sherds are textile impressed, indicating the possibility of a Sandy Lake Corded vessel from The Forks site.

The Lac du Bonnet site (EcKx-3) is represented by a large collection housed at the MMMN in Winnipeg as Accession #A1976-4. It is in the same Borden unit as the River Mouth site. One very thin (~3.0 mm) rim sherd (#EcKx-3/161) is likely SLW, since it has a flat lip, parallel vertical textile impressions, a straight rim, and is plain. This sherd likely represents a Sandy Lake Corded plain vessel at this site. Other components represented at the Lac du Bonnet site include Laurel, Blackduck, and the Rainy River composite.

Another likely example of SLW was viewed in the W.H. Rand collection held by the MMMN. Number H1.3-69/M1 has an obliterated vertical textile impressed surface finish until near the lip, where it is smooth. It is a very thin sherd with residue, grit temper, and no decoration. This rim sherd has the classic, straight profile so commonly found on SLW vessels (Figure 2.2). Also included in this collection were some Blackduck and Rainy River composite sherds.

**5.3.8 Summary.** Although it has been known for quite some time that SLW is found in southeastern Manitoba (e.g. Trottier 1973), all of the previously described excavated material or collections provide a greater understanding of the distribution in this part of the province. A summary of the vessel counts is found in Table 5.2. The entire assemblage of artifacts from some sites were not examined since this was not always possible. However, it can be stated confidently that there is more SLW present in southeastern Manitoba than previously known and from more locations.

#### **5.4 Southwestern Manitoba**

**5.4.1 Bink Moffatt Collection (DhLq-5).** The large Bink Moffatt collection is housed in the Archaeology Laboratory of Brandon University. These artifacts were surface collected immediately north of the town of La Riviere (Figure 5.1) as noted by Nicholson (1991:170). A variety of different potteries have been found at this site including Plains Village wares, Winnipeg River complex, and perhaps others of the Rainy River composite. Four Great Oasis vessels (Nicholson 1991:170) indicate an Initial Middle Missouri presence in this area. Nicholson (1991:170) also noted the identification of Blackduck, Kathio, and Clam River pottery. The author examined the rim sherds and discovered that there were 12 different SLW vessels, by conservative assessment (Table 5.9), represented among hundreds of rim sherds in this collection. Some sherds do not have numbers, so this aspect was not recorded. One shell tempered body sherd was found in this collection, which may indicate an additional SLW vessel.

**Table 5.9. Sandy Lake ware from the Bink Moffatt collection.**

Rim	Exterior Surface Finish	Decoration	Decoration Location	Lip Shape	Total Vessels
straight	smooth	plain		round	2
straight	smooth	plain		square	3
straight	obliterated t.i.	plain		round	3
straight	obliterated t.i.	plain		square	1
straight	obliterated t.i.	plain		interior bevel	1
straight	textile impressed	plain		square	1
slightly excurvate	textile impressed	tool impressed-CWOI-	interior corner interior neck	square	1
<b>Total</b>					<b>12</b>

-All sherds are thin (about 6 mm mean thickness).

obliterated t.i.-obliterated textile impressed

CWOI-cord wrapped object impressed

**5.4.2 Gordon Randall Collection (DhLw-5).** This collection (Callaghan 1979; Hartlen 1996a, 1996b, 1997; Thompson n.d.-1979?) was surface collected by Gordon Randall, between 1969 and 1979, from five sites located about 3 km northwest of the town of Killarney, Manitoba (Hartlen 1996a:i) (Figure 5.1). These sites are located within about 1 km of each other but their sizes are unknown (Callaghan 1979:4, 5). Although Mr. Randall indicated to Hartlen (1996a:3) that 95 per cent of the pottery was collected from one site, Callaghan (1979:4) had been informed of low percentages being acquired from each of the five sites. Thus, artifacts from each site had been mixed during a previous analysis. Callaghan (1979:4), who likely examined the Gordon Randall collection (n=83 rims or 71 vessels) housed in the Killarney Museum (Jackson 1998:206, 214), treated this portion as if it had been found at one site. The largest portion of the Randall collection (n=324 vessels from 425 rim sherds), studied by Hartlen (1996a:3, 124, 1996b, 1997), is now repositied at Brandon University and it was also studied as if being from a single site. A third part of the Gordon Randall collection (n=81 vessels) is located at the MMMN in Winnipeg and was analyzed by Thompson (n.d.). Hartlen (1996a:11) did not re-examine the whole collection from the MMMN but he used it for comparative purposes. In addition to Mr. Randall's surface collecting, a Brandon University archaeological survey crew collected artifacts from the surface of the Gordon

Randall #1 site (DhLw-5) in 1993, including: a Sonota projectile point, 20 body sherds, assorted cores, and debitage (Hartlen 1996a:9).

All three portions of the Gordon Randall collection have different percentages of Blackduck to Plains vessels (Table 5.10). The latter pots, such as Mortlach or Knife River Fine, typically have cord impressed decorations. Thompson (n.d.:37) suggested that these Woodland and Plains Village vessels represented peoples from these different areas that had occupied the Killarney area. The Brandon University portion of this collection has 145 Woodland and Plains vessels (Table 5.10) which were identified by Hartlen (1996a:124). Table 5.10 indicates that there are more Plains rather than Blackduck (Woodland) vessels in the Gordon Randall collection; this finding implies that more of the peoples who manufactured this Plains pottery inhabited the Killarney area, at least as evident from these five sites. One can propose that generally the Blackduck materials are somewhat earlier dating (Lenius and Olinyk 1990) than the Plains materials. Table 5.10 also indicates the large number (n=297) of vessels represented in the Randall collection not including those categorized as SLW, Vickers focus, and Duck Bay ware by Hartlen (1996a). Of course there could be overlaps in the vessels identified by Thompson (n.d.), Callaghan (1979), and Hartlen (1996a). While the wide range and large size of this collection is useful, one cannot know which sherds came from each site or component.

Thompson (n.d.:36) noted several similarities between the Randall collection pottery and Reid's (1972) sherds from the nearby Lowton site. Hartlen (1996a) and the author also confirm this similarity (see Section 5.4.2) which would indicate that this collection is part of a Vickers focus assemblage (Hartlen 1996a:i). Particularly relevant is that Thompson (n.d.:36) favourably compared two sherds from the Randall collection (vessels #64 and 65) and Reid's (1972) Notched Lip types; the latter is now considered to be mostly SLW (Hartlen 1996a:24). It is interesting that there does not seem to be any

**Table 5.10 Relative numbers of Blackduck to Plains vessels in different portions of the Randall Collection.**

<b>Repository</b>	<b>Blackduck</b>	<b>Plains*</b>	<b>Totals</b>	<b>Source</b>
Killarney Museum	15.5% (n=11)	84.5% (n=60)	100.0% (n=71)	Callaghan (1979:4)
MMMN	38.0% (n=31)	62.0% (n=50)	100.0% (n=81)	Thompson (n.d.)
Brandon University	28.0% (n=92)	16.0% (n=53)	44.0% (n=145)	Hartlen (1996a:124)
<b>Totals</b>	<b>100.0% (n=134)</b>	<b>100.0% (n=163)</b>	<b>n=297</b>	

\*Hartlen's (1996a) Mortlach, Plains Corded, and a Knife River Fine vessel were added together; he had more separate categories than the previous studies.

SLW in the portion of the collection analyzed by Callaghan (1979), because the other parts have some of this ware.

Hartlen's (1996a:2, 124, 1997a:60) thorough analysis identified 324 vessels from 425 rim sherds in the Brandon University collection indicating them to be: 128 miscellaneous, 92 Blackduck, 34 undecorated, 29 Mortlach, 23 Plains cord impressed, 10 SLW, five Vickers focus, two Laurel/Blackduck transitional, and one Knife River Fine. There are also thousands of neck, shoulder, body, and indeterminate sherds in the Brandon University portion. The large number of miscellaneous vessels may account for some differences between parts of the collection as noted previously. In general, the author agrees with the majority of Hartlen's (1996a, 1997) categorizations, having examined the same collection. Many of the sherds are undecorated and do not have the appropriate attributes to be categorized as SLW as he indicated. However, there are a few overlapping descriptive categories, SLW and Vickers focus pottery, which are pertinent to this study. Thus, the author decided to try to determine the differences between these two classifications.

Hartlen (1996a:43) noted that there were 10 SLW pots in the Randall collection, but he lists six of them as having exterior decoration. This vessel area is generally not decorated on most SLW in Minnesota/Wisconsin (Peterson 1986:33), although several exceptions have been noted (Section 2.3.8). The author examined photographs of Minnesota SLW sherds from Peterson's study area and they are similar to those that

Hartlen catalogued as SLW (#S-1, 73, 77/79, 121, 306, 317, 319, and three others not named as such on catalogue cards). Thus, the inclusion of some forms of exterior decoration on SLW may be logical for this area, since there are so many vessels with sparsely decorated upper rims/lips (e.g. Reid 1972). Obviously, the other attributes would have to match those used for the ware as they do for the Randall collection sherds.

Although Hartlen (1996a:20) stated that pottery from the Randall collection was almost exclusively grit tempered, the author noted that #S-35 has shell temper. It has fine pieces of shell and is not easily recognized as such. This sherd is likely Sandy Lake Corded plain and is similar to those found at the Lowton site (Section 5.4.2). Thus, the 10 vessels identified by Hartlen (1996a) and that represented by one shell tempered rim sherd from the Brandon University Randall collection are SLW (Table 5.11).

Hartlen's (1996a:58) analysis was quite conservative (which is not a criticism) in identifying vessels, given that 128 were placed in the miscellaneous category. Many of these sherds are indeed too small or exfoliated to be placed confidently in a ware/type. However, 37 have interior decoration of seven different applications (Hartlen 1996a:58), likely indicating at least seven different vessels, of which some might be SLW. Thus, the author examined the 'miscellaneous' sherds from the Randall collection from Brandon University, taking a slightly less conservative approach and attempting to identify SLW vessels. After all, this author was not faced with learning and sorting out the entire collection as Hartlen (1996a) had been. It is suggested that there are actually another 25 SLW pots represented in the miscellaneous portion of the Randall collection (Table 5.11).

Ten vessels categorized by Hartlen (1996a:39) in his undecorated (suggested to likely be Duck Bay Undecorated) category (n=34) are probably SLW plain variant (Table 5.11). Those with square or round lips, thin walls, and smoothed, corded or parallel vertical textile impressions were included in SLW. The neck had to be of even thickness or thicker than the lip. These attributes would indicate SLW rather than Laurel or some other smoothed ware.

**Table 5.11. Additional vessels identified as Sandy Lake ware from the Randall collection (Brandon University portion).**

Sherd #s (Prefix S-)	Int. Lip Decoration	Lip Decoration	Exterior Decoration	Undecorated	V n=
29/120(t), 179(t), 262/ 359(t)	crimping				3
40(t)	slight crimping		ext. boss/int. punctate on rim		1
155(t)	right oblique CWOI		r. oblique CWOI on lip corner		1
5(s), 61(t), 131(t), 133(s)		right oblique CWOI			4
9(t), 225(o)		incised channel			2
128 (stamped)		right oblique sharp t.i.			1
210(t)		right oblique tool imp.			1
234/244(s)		left oblique sharp t.i.			1
308(t)		square t.i.			1
68, 239/273				smooth	2
250/266, 260/274, 351				obliterated	3
28, 69				textile impressed	2
70, 247/263, 323				vertical corded	3
<b>Totals</b>	<b>5</b>	<b>10</b>		<b>10</b>	<b>25</b>
10 vessels from Hartlen (1996a)*					7
1 shell tempered				textile impressed	1
5 'Vickers focus'					5
<b>Total SLW</b>					<b>38</b>

-29/120-indicates that both of these numbers are part of the same vessel

\*The author did not know the numbers of three of the SLW vessels identified by Hartlen (1996a), so three were subtracted from the 10 that he had categorized as such.

(t)-parallel vertical textile impressed

CWOI-cord wrapped object impressed

(s)-smooth

t.i.-tool impressed

(o)-obliterated

V=vessel

Having examined the five identified Vickers focus vessels from this collection (Hartlen 1996a:26-27), the attributes are the same as used for identifying SLW, if including certain kinds of exterior lip decoration as above. Hartlen's (1996a:26) opinion of the defining pottery attributes used to identify Vickers focus sites were:

surface finish ranges from smoothed to obliterated textile impressed to parallel vertical textile impressed; rim profiles range from straight to shallow S-rim; and decoration consists of tool impressions on the interior and/or exterior lip surfaces. In some circumstances, the tool impressions are replaced with oblique CWT impressions. A small number of vessels



exhibit finger pinched nodes or nubbins on the exterior lip edge (sic). Due to disfigurement caused by the application of decoration and the high degree of variation, a definitive lip shape could not be assigned.

With the exception of finger pinched or 'nubbin' decorations, the attributes are the same as for SLW. Nicholson (1991) suggested that this type of decoration was characteristic of Vickers focus pottery and the author certainly observed this kind of decoration on Johnas site rims. Four of five vessels assigned to 'Vickers focus' pottery (Hartlen 1996a:26-27) also have interior decoration characteristic of SLW. One of these sherds (#S-3) even has interior neck decoration (Hartlen 1996a:27), a rare trait in southwestern Manitoba, but which is characteristic of some SLW. It has an outwardly flared neck but a short straight rim. Although the former trait is unusual for SLW, all of the other traits would be closer to SLW than Vickers focus. One vessel (#S-2) has an interior flanged lip (Hartlen 1996a:27), which is not typical of SLW, but this is caused by the tool impressions on the interior lip. Thus, the author does not believe that the five sherds categorized by Hartlen (1996a:26-27) as Vickers focus pottery are significantly different from SLW (Table 5.11).

Other rim sherds (e.g. #S-206, 214, 357), categorized by Hartlen (1996a:124) as 'miscellaneous', seem to match the suggested attribute list for Vickers focus pottery. Figure 4.3 indicates attributes that are representative of this pottery.

Hartlen (1996a:i) summarized his views about how the Randall collection fits into precontact times in southwestern Manitoba:

From the analysis conducted, it has been concluded that Sandy Lake people comprise one of the immigrant groups which make up the Vickers Focus. The subtle differences between Sandy Lake pottery and what has been defined as "Vickers Focus" pottery is believed to represent a Scattered Village influence from the south. It is therefore proposed "Vickers Focus" pottery was a regional variant of Sandy Lake Ware and if, as Walde [1994] suggests, Mortlach pottery was a successor to Sandy Lake, then there might also be a Sandy Lake/Vickers Focus/Mortlach continuity.

The author agrees that people who made Sandy Lake were probably immigrants to southwestern Manitoba, as evident by the many vessels identified in this thesis and in

other reports. Sandy Lake ware is certainly found at Vickers focus sites, which are distinctive locations, and some do provide circumstantial evidence for horticulture (such as at Lowton and Lovstrom; see Section 4.2.8). Since SLW is found at these sites, and there is believed to be a later blending of traits from contact with other groups at these sites (Fused Ethnicity of Polyethnic Coresidence in Nicholson 1991:172; Syms 1980; Walde 1994), it is logical that there are similarities between SLW and what resulted as Vickers focus pottery. However, the author's contention is that if the attributes conform to previously published descriptions established over 30 years ago, in this case SLW, the vessels should be identified as such. Hartlen (1996a:12) noted this problem: "For example, pottery that was identified as Vickers Focus, could also be Sandy Lake, depending upon how the description/attributes were interpreted." Vickers focus pottery has its own set of attributes which have been outlined by Nicholson (1991:167). Also, the occupations are likely quite limited in time, from about A.D. 1400-1450 and maybe up to 1625 (Nicholson and Hamilton 1997). Sandy Lake ware has a long duration of between about A.D. 1000-1750, as previously discussed in Section 3.7, which overlaps with the dates of the Vickers focus. Thus, the author believes that Vickers focus pottery has discrete attributes. Exterior decoration on some SLW from the Randall collection may be explained as a regional variation.

Hartlen (1996a:i) proposed that 'Vickers focus' pottery is a regional variant of SLW influenced by the Scattered Village complex from North Dakota. This conclusion is logical given that Nicholson (1991:170) noticed similarities between characteristic Vickers focus pottery and this complex in appearance as well as time frame. It would also account for the Plains and Woodland influences found in the Randall collection. Another reason that Hartlen (1996a:i) included the Randall collection in the Vickers focus sites is based on the distinctive location of these sites. Thus, the Gordon Randall sites are part of the Vickers focus locality and contain a significant portion of SLW with 38 vessels or 11.7 per cent of the 324 vessels in the Brandon University portion. With a more

conservative identification, Hartlen (1996a) suggested that 3.1 per cent of the collection was SLW.

**5.4.3 Lowton (DiLv-3).** The Lowton site is located in the Tiger Hills, between Baldur and Ninette, with Pelican Lake being the closest existing water source (Figure 5.1). Vickers (1945) was the first researcher to work at and record this site in southwestern Manitoba, although artifacts have probably been collected from there since the 1920s after land clearance took place (Nicholson and Malainey 1995:87). When Nicholson directed archaeological survey work in this area for several seasons (including the author) in the early 1990s, avocationalists such as Ken and Joanne Campbell were still collecting from the Lowton site. Vickers (1950:11) included the site in his Pelican Lake focus and noticed the shell tempered sherds there, noting 98 per cent grit and two per cent shell tempering. When it was discovered that some sherds were tempered with shell and that Hartlen (1996b) had identified SLW in the Randall collection and Lowton site materials, the author decided that it was logical to examine these artifacts. Vickers donated his entire Lowton site collection of 4,111 objects to the University of Manitoba in 1963 (Nicholson and Malainey 1995:89), except for those noted by Reid (1972:7): 50 sherds sent to the North Dakota Historical Society and 66 to the National Museum of Canada. Reid (1972:39) later analyzed 1331 rims sherds of this collection, proposing 32 types largely based on decoration. While most of the types were linked to published wares, he did not decide on an affiliation for most of these types. However, the pottery was classified quite early in the chronology building stages of Manitoba archaeology.

Syms (1981) described an 'exotic' ground stone axe found at the Lowton site, which is just one example of the artifacts from it that have intrigued researchers and avocationalists for decades. Other recoveries include Catlinite items, large numbers of Knife River flint artifacts such as projectile points, unique pottery with anthropomorphic figures, bone tools, and ground and pecked asymmetrical stone tools described as hoes by Vickers in his field notes (Nicholson and Malainey 1995:98).

There is a complex history to the interpretation of artifacts from the Lowton site. Initially, Vickers (1945:93) believed that the site was inhabited by Woodland people at about A.D. 1300, based on recoveries of cord marked, grit tempered pottery. He also proposed that the presence of heavy stone tools, identified as hoes (Vickers 1945:92), and an abundance of pottery indicated that these people relied on horticulture to some degree (Nicholson and Malainey 1995:89). Vickers (1945:93) also believed that these people had moved onto the Northern Plains and were forced to become nomadic bison hunters. Then, he proposed that the Lowton site had been inhabited from about A.D. 1300-1600 and that it was a summer Hidatsa village (Nicholson and Malainey 1995; Vickers 1946:7-8). After examining sherds from Dundurn, in central Saskatchewan, Vickers (1950:13) decided that from A.D. 1400-1650 the inhabitants of Lowton were living at an eastern outpost linked to that province and Alberta (Nicholson and Malainey 1995:89). Interestingly, Nicholson and Hamilton (1997) have suggested a very similar range of dates for Vickers focus sites, based on radiocarbon dating results. Later, Reid (1972:109) proposed an occupation period of A.D. 1350-1650, with the inhabitants being linked to Middle Missouri village groups and Woodland cultures from the east.

Later, Nicholson (1991) included the Lowton site in his Vickers focus along with the Lovstrom and Johnas sites (discussed in Section 5.4). The Vickers focus was renamed in honour of Chris Vickers, instead of his Pelican Lake focus (of an unknown aspect) which had later been used by another researcher to categorize the Pelican Lake projectile point and corresponding complex dating much earlier. Nicholson (1991) also proposed that Lowton should be the type site for the Vickers focus sites, because of the extensive amounts and diversity of pottery (Bev Nicholson, personal communication, 1999). A problem with using it as a type site is that much of it is disturbed by cultivation; thus, the possibility of discovering the relationships between artifacts in this collection is limited. Vickers (1945) excavated part of the site in small treed areas before it had been cultivated but some of the information about his tests has been lost. The original

excavation area had a road built through it (Reid 1972:5). However, to help overcome these problems, Nicholson and Malainey (1995:87) conducted some test probes to attempt to find undisturbed areas, particularly storage pits, in this case buried below the plough zone at this site. A hearth was discovered and several units were excavated to determine artifact relationships as well as to obtain <sup>14</sup>C samples (Nicholson and Malainey 1995:87). One resulting date is 510±110 B.P. (S-3459) which is consistent with other Vickers focus components (Nicholson and Malainey 1995:97). These findings along with the continued, numerous surface collections indicate that there are intact archaeological deposits at this large site (Nicholson and Malainey 1995:87).

The 1992 excavation also served to provide more evidence about the faunal remains at the Lowton site of which several species were identified: bison, canid, cervid, and lagomorph. Malainey (1997:259) also tested 27 (n=14 with a/b denotations) pot sherd residue samples from the Lowton site, with 13 exclusions, resulting in 14 remaining samples. Only one residue signature indicated anything other than large herbivore being cooked in a pot and this was plant combined with large herbivore. Since there have been many bison bones recovered from the Lowton site, Malainey's (1997:200) results of the identification of large herbivore residue on sherds from there supports the notion that residents of this site were probably relying on this animal to a large degree. Therefore, bison hunting was a major activity in the lives of the people who occupied the Lowton site.

As Malainey (1997:250) suggested, there are likely more than 100 vessels represented from the sherds recovered at the Lowton site. The author did not examine the artifacts from 1992 excavation, since they were already categorized, according to Reid's (1972) thesis, and clearly illustrated by Nicholson and Malainey's (1995). Reid's (1972) analysis was used to try and determine how many SLW vessels there are at this site (Table 5.12) and the collection was examined with particular interest in the shell tempered vessels. Although he indicated that plain vessels could have many affinities (Reid

**Table 5.12. Types from Reid (1972) which conform to Sandy Lake ware.**

Group	Type	Subtype	#
1-Undec. (53)	4-thin, flat lip surface	4a-corded s.f.; straight to slightly S rims; lips slopes range from in-, non, to outsloping lips; overhang is mostly absent	37
		4b-t.i. s.f.; incurved, straight, to outcurved rim; lip slope is mainly absent; overhang is absent	10
		4c-smooth; same as 4b	6
	*6-thin lips, convex lip surface; corded (5), obliterated corded (7), smooth (3); slightly outcurved through straight to slightly incurved; no flare; lip slopes slightly outsloping through horizontal to insloping; no overhang		15
5-Notched Lip (279)	20-decor. on a flat lip; only in notches cut into either or both edges or lip surface; lips med. thick to thick; overhang slight to absent	20a-lip, lip int., ext. edges; corded, smoothed, t.i., straight, S-rim	205
		20b-scalloped lip	34
		20c-alternating notches	19
	22	22a	
		22b	
		22c	
		22d	
		23	
	25	25a-no scalloping	56
		25b-scalloped lip	18
	27	same as 25, except round lip	9
Shell Temper	Deduct 32 rim sherds for shell temper		-32
<b>Total</b>		<b>Sherds</b>	<b>368</b>

\*Reid (1972:56) noted that this type conformed to Cemetery Point Corded, which has since been relegated to Sandy Lake ware.

-The number refers to sherds, not vessels.

1972:61), there is obviously a possibility that these are plain SLW. First of all, from the Lowton site collection there are 32 shell tempered sherds, of which 29 rims and 3 body sherds were found. Of this total, at least 16 SLW shell tempered vessels are represented at the Lowton site (Table 5.13). Two are check stamped (n=two vessels), indicating rare examples of this type in SLW assemblages well to the north of Birk's (1979) suggested distribution for this type. Another assessment is that one Lowton site shell tempered rim sherd (120-514) is much thicker and has amorphous Selkirk-like textile impressions rather than the typical parallel vertical textile impressions found on SLW. It may be that

**Table 5.13. Shell tempered vessels from the Lowton site, Manitoba.**

#	Profile	Surface Finish	Lip	Decoration	Reid's Types <sup>2</sup>
120-467 120-737 <sup>1</sup>	straight	p.v.t.i.	smooth, exterior bevel	plain	1A, 4A
3586	incipient S	p.v.t.i.	smooth, square	plain	4A
no #	straight	p.v.t.i.	oblit., square	plain	4B
120-498	straight	p.v.t.i.	smooth, square	plain	7A
120-410	straight	p.v.t.i.	oblit., square	plain	9
2910	straight	p.v.t.i.	smooth, square	plain	No #
2879	incipient S	p.v.t.i.	smooth, square?	exterior tool imp.	20A
120-632, 668	straight	smoothed	smooth, square	plain	1C
120-673	straight	obliterated	oblit., square	plain	7A
3012 (+1)	short, slightly exc.	obliterated	t.i., square, exterior bevel	plain	17D
120-655	straight	obliterated	undet., exterior bevel	r. oblique tool imp. across lip	15B
120-101	straight	obliterated	smooth, square	interior rounded tool imp.	20A
2843	straight	obliterated	smooth, square	interior round tool imp.	25A
120-577, 120-754	straight	oblit. check stamped	smoothed, interior bevel	plain	"Aberrant sherds"
no #	straight	oblit. check stamped	smooth, interior bevel	incised short lines on exterior corner	29
2802 (+2 b. sherds)	straight	amorphous textile imp.	smooth, square	plain	7A
2759	straight	amorphous textile imp.	oblit., square	interior r. oblique tool imp.	9
120-794	straight	amorphous textile imp.	smooth, square	interior tool imp.	20A
3023, 3209	straight	amorphous textile imp.	smooth, square	interior round tool imp.	20B
120-1350	straight	amorphous textile imp.	interior bevel	lip vertical round tool imp.	22A
120-202, 249, 829	straight	amorphous textile imp.	t.i., square	CWOI on lip, interior corner r. oblique CWOI	29
120-1314	straight	oblique amorphous textile imp.	oblit., square	plain	No #
120-514 (2163) <sup>3</sup>	excurvate	very coarse amorphous textile imp.	t.i., square	exterior tool imp.	No #
<b>Total=32</b>					

p.v.t.i.-parallel vertical textile impressed      t.i.-textile impressed      exc.-excurvate  
 oblit.-obliterated      r.-right  
 undet.-undeterminable      imp.-impressed

<sup>1</sup>It is apparent that some of the boxes indicating Reid's (1972) types have been mixed up after numerous people have examined the collection, since these two sherds are from the same vessel. Also, the 4B type box had no sherds in it. However, his types are described in enough detail as to be used.

<sup>2</sup>This grouping is the one that the sherd was found in when examining the collection.

<sup>3</sup>This sherd is much thicker (~8.5 mm) than the other shell tempered sherds (~6.0 mm) at the lip. It also has a fairly large (~8.0 mm) rounded clast visible in the vessel wall.

this individual vessel represents a Selkirk/SLW syncretism. Other sherds also have this amorphous textile impressed exterior surface finish but their other attributes appear to match those established for SLW.

The total number of 368 SLW at the Lowton site is high (Table 5.12) but this is explained by the fact that this is a rim sherd count rather than vessel numbers (Table 5.14). It is hoped that this is a more accurate reflection of the total. Hence, having identified a significant number of SLW vessels corroborates Nicholson's (1991) idea that this ware is present at this Vickers focus site. Reid (1972) did mention similarities between Group 5 (Notched Lip) and Cemetery Point Corded type which is now considered to be SLW (see Section 4.2.3).

**5.4.4 Duthie (DiMe-16).** The Duthie site is considered part of the *Makotchi Ded Dontipi* locale in the Lauder Sandhills and about 10 km west of Lauder, southwestern Manitoba (Figure 5.1). A dried up oxbow meander of the Souris River is located just south of the site and the present day course of this river is now about 2 km from the site (Nicholson and Burton-Coe 1992:3). The Duthie site was discovered as the result of municipal road building (Nicholson and Burton-Coe 1992). During construction, a bulldozer uprooted many trees and was used to dig ditches on either side of the new road. This machine left patterns of disturbed swaths parallel and perpendicular to the road but undisturbed areas in the aspen bush on either side. Thus, a large portion of this extensive site was exposed, allowing artifacts, hearths, and flintknapping areas to be viewed as well as collected (Nicholson and Burton-Coe 1992). Most of the exposed artifacts were on the west side of the road. The late Gordon Phillips, an avocationalist, was informed that large amounts of bone were being uncovered by the road building activity; he contacted Gaye Burton-Coe, who then consulted with Brandon University archaeologist Dr. B.A. Nicholson (Taylor 1994a). This interaction resulted in funding of the first archaeological testing of nine 1m<sup>2</sup> units at the Duthie Site by Gaye Burton-Coe in 1992 (Nicholson and Burton-Coe 1992). Next year, the author, Tomasin Playford, Vera Brandzin-Low, and



**Table 5.14. Sandy Lake ware vessels from the Lowton site.**

Type Sub-type	Surface Finish	Decoration	Total Vessels
20a	corded*	interior corner tool imp.	20 <sup>1</sup>
		plain	3
	obliterated	interior corner tool imp.	5
		lip	8
	smooth	interior corner tool imp.	3
		plain	2
		interior & exterior tool imp.	2
20b	corded	interior corner tool imp.	9
	obliterated	interior corner tool imp.	5
	amorphous t.i.	interior corner tool imp.	1 <sup>2</sup>
20c	corded	interior & exterior tool imp.	8
	obliterated	interior & exterior tool imp.	4
22a	corded	int. corner tool imp.	
	obliterated	int. corner tool imp.	
	smooth	int. corner tool imp.	
	amorphous t.i.	int. tool imp.	1 <sup>3</sup>
22b	corded	int. corner tool imp.	5
	obliterated	int. corner tool imp.	
	smooth	int. corner tool imp.	
22c			
22d			
23			
25a	corded	interior corner tool imp.	4
25b	obliterated	interior corner tool imp.	4
<b>Total</b>			<b>84</b>

\*Cord roughened or parallel vertical textile impressed; the typical textile impressed finish found on Selkirk or Vickers focus vessels was not included.

<sup>1</sup>One of these is a shell tempered vessel (#794-120).

<sup>2</sup>Two sherds (#3023 and 3209) of this shell tempered vessel are present in this type.

<sup>3</sup>One sherd (120-1350) in this type is shell tempered.

-All are straight rims and thin vessel walls (~6 mm mean thickness).

Bruce Low excavated several lines of test pits and seven 1m<sup>2</sup> units in different areas west of the road (Taylor 1994a, 1994b). In 1994, a field school was held at the Duthie and Jackson (DiMe-17) sites, with 13-1m<sup>2</sup> units being excavated by students (e.g. Voth 1996) at the former site (Taylor 1995a, 1995b, 1996a, 1997). Although the author analyzed the 1992 and 1993 artifact recoveries from the Duthie site (Taylor 1994a), the 1994 pottery has only been referred to generally in Taylor (1996a) and later in Voth (1996). Therefore, this section provides an analysis of the 1994 recoveries and a summary of the previously identified SLW from this site.

Other interesting aspects of the Duthie site include the close proximity of the Saskatchewan (Stadel 1992) and Grand Valley Trail, which is shown on the 1881 survey map within a few kilometres northwest (Nicholson and Burton-Coe 1992:4). It is believed that the latter trail is part of the precontact Yellow Quill trail that linked the Winnipeg area to the Mandan villages in North Dakota (Nicholson and Burton-Coe 1992:4). Only one historic artifact, a plain metal button, was found on the exposed surface (Taylor 1994a). The presence of this trail suggests that the area of the Duthie Site may have also figured prominently in precontact times, as part of a travel route to or from the south along the Souris River (Taylor 1994a).

Artifacts from the combined surface and excavated recoveries at the Duthie site are numerous, consisting of: large amounts of varied pottery; an incised Catlinite tubular pipe (assessed as being from the Catlinite quarry in Minnesota as requested by Nicholson); flintknapping areas; hearths; exotic and local lithics; one Hanna, several triangular, and side-notched projectile points; bone tools; and large amounts of bison bone plus some duck, canine, deer, fish, and rodent faunal remains (Taylor 1996a). One radiocarbon sample for the Duthie site was assessed at  $880\pm 80$  B.P. (Beta 62705) (Taylor 1994a:8). However, this sample was not associated with many cultural materials and was taken from a lower level in the site (Nicholson and Coe 1992).

The pottery from the Duthie site is particularly noteworthy, with sherds of a vertically-attached, multi-handled vessel being recovered in 1993 and 1994 (Taylor 1996a:95); portions of this anomalous vessel were reconstructed mainly by George Hartlen and the author. Figure 4.2 depicts this vessel which currently has five handles and is presumed to have had eight (Taylor 1996a:95); similar photographs taken by the author appear in Voth (1996) and Welsted et al. (1996:Plate 8). The exterior of this thin walled vessel was burnished, trailed in horizontal over right oblique rows, tool impressed on the excurvate rim, and grit tempered. About 50 per cent of the vessel was recovered during the 1993 and 1994 seasons. This vessel has the closest resemblance to Initial

Middle Missouri pottery and Northeastern Plains Village ware, although SLW has also been identified at this site (Taylor 1994a). It is presented here because it is one of the most complete vessels from southwestern Manitoba.

Several different SLW vessels have been identified at the Duthie site, since the excavations and very limited surface collecting has occurred there (Table 5.15). There are a variety of surface finishes smoothed, smoothed/wiped, obliterated, parallel vertical textile impressed. Some are undecorated and others have tool impressed interiors or lips as the only decoration. Several sherds (#S-120, S-1826, S-1827, S-1829) have the attributes of SLW but they are too small to not rule out another affiliation or being part of another vessel already identified. Also interesting is a particular type of paste that is found at both the Duthie and Gould sites. This paste is typically light to medium grey, sandy, dull, and coarse, often with shiny grit particles revealed, as seen on (#S-102, S-108, S-1755, S-1859, S-1860). The relevance of the paste of these sherds is that they differ from the other vessels at this site. Other than the small sherds previously mentioned which may be SLW, there are at least seven vessels of this ware represented at the Duthie site.

**5.4.5 Bradshaw (DiMe-20).** The Bradshaw site is situated in the *Makotchi Ded Dontipi* locale (Figure 5.1) in southwestern Manitoba. This site was discovered through artifact recoveries in test pits. Also, a test unit which had many recoveries was excavated by Bruce Low during the 1995 field season. The artifacts from these excavations were analyzed by Pankratz (1996). Subsequently, the author and others excavated eight units at this site in 1996 which Suyoko Tsukamoto (personal communication, 1999) incorporated into her honours thesis research. Her thesis was not completely revised at the time of writing.

One reason for examining the pottery from the Bradshaw site is that Pankratz (1996:86) suggested:

Two of the vessels represented by rims exhibit similarities to Sandy Lake Ware. The time frame for this ware is approximately 1000 A.D.-1700 A.D. These two vessels however, show a greater number of similarities

**Table 5.15. Details of Sandy Lake ware from the Duthie Site.**

#	Surface Finish	Decoration	Lip	Thickness (mm) <sup>1</sup>	Type
S-88	p.v.t.i.	none	square; textile impressed	5.8-7.0-8.0	Corded; ridged neck
S-102	smooth	right oblique round dowel imp. on int. lip/rim junction	rounded-deformed by decoration	8.0-6.5-ind.	Smooth
S-108	smooth/wiped	square dowel on int. lip/rim junction	rounded with a slight int. bevel (deformed)	8.1-5.5-6.5	Smooth
S-1738	smooth	int. oval tool imp. on the bevel	expanding bevel	6.9-5.5-ind.	Smooth
S-1826	smooth/wiped	right oblique oval dowel imp. on lip	rounded lip	6.5-4.5-ind.	Smooth
S-1859	smooth/wiped	small oval tool imp. perpendicular on lip	square-deformed by decoration	5.3-6.8-ind.	Smooth
S-1860	obliterated	none	int. bevel	6.9-5.1-6.6	obliterated

<sup>1</sup>First measurement is the maximum thickness at the lip, second is at 2 cm below the lip corner, and the third is at the neck if it is visible.

p.v.t.i.-parallel vertical textile impressed

int.-interior

wiped-smoothed so much as to reveal the grit particles

CWOI-cord wrapped object impressions

imp.-impressed

-All vessels have straight rims and grit temper; all lips are smoothed unless specified.

to the Early Variant of the Saskatchewan Basin Complex ceramics estimated to span the interval between A.D. 150-250 to A.D. 1150.

Since there were two partially reconstructed vessels from this site, a rarity, it seemed logical to examine them. Pankratz (1996:86) identified 17 other vessels from this site but Tsukamoto (personal communication, 1999) suggested that there were fewer than that number represented by sherds. Other vessels from the Bradshaw site have the greatest affinity to Mortlach pottery, with wedge shaped rims and dentate decorations being fairly common.

One of the two vessels from the Bradshaw site mentioned above by Pankratz (1996:86), Vessel #2 (#1-3-2, etc.), was found in Test Unit 1 in arbitrary 5 cm levels 1 and 2 (ibid.:50). A side-notched projectile point was found in level 3 of this same unit Pankratz 1996:22). Using the Law of Superposition as a basis, the projectile point is either older or roughly the same age as the pot, given that the stratigraphy is essentially undisturbed except for minor taphonomic changes. Therefore, it is unlikely that this partially reconstructed Vessel #2 is an Early variant Saskatchewan Basin complex vessel

(a.k.a. Avonlea or Brainerd), since the projectile point is either a Plains or Prairie Side-Notched type. Having examined this pot, it does not have the attributes of Avonlea vessels which have thicker walls, net impressed, parallel grooved, or textile impressed surface finishes, coil breaks, and a conical shape (Davis 1988). Instead, Vessel #2 is undecorated, obliterated (slightly burnished) on the exterior, has fine grit tempered, has a roundish lip, and a squat profile. This vessel has a very slight neck which is thickened, compared to the lip. These attributes are all characteristic of SLW and the author would identify it as a Smooth plain variant.

A second reconstructed Vessel #3 (#S-1) from the Bradshaw site was found in a sand blowout 16 m south of Unit 1 where about 30 sherds were recovered (Pankratz 1996:22) and 15 are glued together. This site is found in the Lauder Sandhills, so sand is often blown out of place, particularly in unstabilized portions. This pot is slightly thicker than Vessel #2 and has a somewhat more angled profile between the lip and shoulder. Vessel #3 is undecorated, smooth, and has a flat lip. A large clast is visible about half way down the exterior wall of this vessel, indicating the inclusion of some other materials than the typical grit temper. This clast is about 8.0 mm in length and about 3.0 mm in width. There is no appreciable neck, so the lip and what would be the neck are about even in thickness. Vessel #3 closely resembles SLW Smooth plain, as originally suggested by Pankratz (1996:86). This pot, along with Vessel #2, indicates that there are at least two SLW vessels at the Bradshaw site.

**5.4.6 Johnas (DkMd-11).** The Johnas site is located about 3 km north of the Assiniboine River, northeast of the town of Oak Lake, Manitoba (Johnas 1988:33; Lelond 1988:49) (Figure 5.1). Artifacts were collected from a cultivated field by Uwe Johnas, who donated the collection to the Archaeology Laboratory at Brandon University (Johnas 1988:33). These objects have been affected by farming activities since they are fairly fragmentary, with many of the sherds measuring less than 2 cm<sup>2</sup>. Pottery from this site has been discussed by several people (Johnas 1988; Lelond 1988; Nicholson 1991;

Taylor 1994a). Johnas (1988:35) discussed 38 rim sherds from the Johnas site indicating that they had similarities to: Blackduck (Carmichael 1977); Saskatchewan Basin complex (Byrne 1973); Riggs, Le Beau and Knife River wares of North Dakota (Ahler et al. 1991); and Talking Crow ware of South Dakota. Lelond (1988) described body sherds from this site.

Stone tools, debitage, a few bone fragments, and stone tools that were interpreted by Nicholson (1991:169) as being hoes were also found at the Johnas site. Unfortunately, since this site is disturbed, it is not known definitely how these stone hoes are associated with the different pottery wares. It has been suggested that the Johnas site was likely occupied temporarily and seasonally, perhaps for horticultural purposes (also Nicholson 1991):

Its seasonal use could have been for agricultural purposes. The site contains sandy soil and a fairly high water table, which would make it suitable for growing corn or gourds. The high numbers of sherds distributed over the site could indicate the use of ceramic vessels for activities such as the processing and storing of plant foods (Johnas 1988:46).

Johnas (1988:45) suggested that the Snyder I (DhMg-4), Snyder II (DgMg-15), Brockington (DhMg-7), and Riverview (DgMh-10) sites from the Melita area of southwestern Manitoba had similar environments and pottery to the Johnas site. He (Johnas 1988:46) proposed that pottery from these sites be named 'Symsware', although this term has not been used much (if at all). Instead, Nicholson (1991) later assigned this site to his Vickers focus. Since many of these sites have SLW, the author decided to re-examine these sherds.

The Johnas site collection contains many interesting pottery fragments. First of all, the sheer variety and number of vessels represented (n=38 or more as indicated by Johnas 1988:33) is impressive. Lelond (1988) presented a detailed analysis of the body sherds and pastes of this collection. An interesting observation made by her was the presence of grog (broken pottery) temper in some sherds, instead of the grit substance

typically used (Lelond 1988:54). Lelond (1988:68) also noted that “fabric impressed Sandy Lake ware is similar to some of the sherds in the Johnas collection. . . . It is found in the area extending south of the Johnas site.” A few rim sherds have parallel vertical textile impressions which is the textile impression characteristic of SLW (Table 5.16). One or two sherds are check stamped (Lelond 1988:58) as is one type of SLW and Mortlach pottery. It is also interesting that there are a number of different kinds of textile impressions on the sherds, with the majority being amorphous (no prevailing orientation) as is characteristic of Winnipeg Fabric-impressed ware. This surface finish is also found on sherds assigned to Vickers focus pottery (as seen in Nicholson 1991:182D). Other sherds have a smoothed or obliterated exterior surface finish.

Sherds in the Johnas site collection are quite thin, ranging from 3.0-8.7 mm (Lelond 1988:55). Lelond (1988:67) and Meyer (1981:28) have noted that sherds gradually become thicker as one goes west from southwestern Manitoba (e.g. Old Women’s phase). The typical thinness of this pottery is similar to SLW vessels.

Lelond (1988:70) noticed the connection between trailing found on Johnas site pottery and SLW, which is intriguing. However, the other attributes of the trailed sherds from this site do not conform with the attributes typically found on SLW. Several other sites, such as Duthie (Taylor 1994a) and Lowton (Reid 1972), also contain trailed sherds with the implication being that SLW with trailed decoration is present in a few locations in southwestern Manitoba. As indicated in Section 4.2.6, trailed SLW is probably due to Oneota influence (Sandy-ota according to Peterson 1986:Plate I) which is also found in the Northeastern Plains Village complex in North Dakota (Michlovic and Swenson 1998).

Several sherds (#S-111, 258) exhibit the finger pinched exterior rim decoration characteristic of Vickers focus pottery (Nicholson 1991). Most of the rim sherds are quite small (~2.5 cm) and no reconstructions have been done, so a judgment was made

**Table 5.16. Sandy Lake ware from the Johnas site.**

#	Rim	Surface Finish	Decoration	Lip	Thickness (mm)
118	incipient S	obliterated	exterior r. oblique round tool imp.	smooth, square	7.3 lip 8.1 neck
120	straight	obliterated p.v.t.i.	interior round dowel imp.; may be oblique lip CWOI	t.i., square	6.4 lip, 7.6 neck
127	straight	p.v.t.i.	plain	t.i., square	6.7 lip 5.0 neck
131	straight	obliterated	exterior vertical dowel tip imp.	smooth, square-deformed	7.4 lip 7.7 neck
259	straight	smooth	exterior corner tool imp. (triangular)	burnished, flat-deformed	6.4 lip 6.5 neck

r.-right

imp.-impressed

p.v.t.i.-parallel vertical textile impressed

CWOI-cord wrapped object impressed

whether a sherd was large enough to assign it to a ware. Johnas (1988:45) also commented about the difficulty in assigning affiliations to this collection, which was also affirmed by the author.

The five SLW vessels identified above are probably only a few of those present since most vessels have either straight or incipient S shaped rims and have smooth, obliterated or textile impressed surface finishes along with various types of lip notching. Thus, there are many attributes present which conform to SLW but the small sherd size does not allow for certain identification.

**5.4.7 Gainsborough-Souris Locality.** This group of 10 sites, described by E. Leigh Syms (1974, 1977:130, 1979a), is located along the Souris River south of Melita, Manitoba (Figure 5.1). Reid (1972:60) suggested similarities between his Type 1 undecorated Lowton pottery, of which some sherds are similar to SLW plain variant, and two sherds found at the Snyder I site. He also noted that 17 sherds from the Riverview site (see below) were similar to Type 1 at the Lowton site. Knowing these references to similar pottery to SLW at the Gainsborough-Souris Locality, the author examined many of the available artifacts from these sites, which are housed at the MMMN.

Michlovic (1987:53) had suggested that the description of some vessels from the more recent component at the Snyder Dam (DhMg-37) site appeared to be similar to



SLW, and Reid and Rajnovich (1980:81) similarly suggested that these vessels were alike Ash Rapids Corded (which the author has deemed to be SLW). While some attributes are comparable, the overall vessel shapes, and much greater thickness of these vessels suggest a closer affinity to Old Women's phase pottery (e.g. Taylor 1995c). Although this idea would indicate a farther western extent of that pottery, similarities between Old Women's phase pottery and the later component Snyder Dam site vessels exist. Other affiliations have been proposed for the pottery in the Snyder Dam site, with the older component being favourably compared to Hannaford ware (Hohman-Caine and Goltz 1998). These more recent Snyder Dam vessels are not Ash Rapids Corded or SLW.

One rim sherd (#M14) from the Snyder II North site (DgMg-15) was identified, by MMMN staff member L. Hambly, as SLW. The Snyder II North site is a multi-component campsite. L. Hambly noted that this sherd was recovered during uncontrolled surface collecting. Rim sherd #M14 from the Snyder II North site has an incipient S shaped profile with a parallel vertical textile impressed surface finish that has been obliterated. The decoration consists of shallow notching on the interior of this sherd, which has a square lip. It is likely an example of Sandy Lake Obliterated notched variant.

The Snyder site (DgMg-16) is also within the Gainsborough-Souris locality. Rim sherd #M75 is very thin and has a smooth surface. The profile is vertical and there is no decoration. This rim sherd seems to represent a Sandy Lake Smooth plain variant vessel.

As mentioned previously, sherds from the Riverview Site 1 (DhMg-10) had affinities to the Lowton site pottery. Numbers RV 860 and RV 763 are plain, smooth, thin, vertical rim sherds. A few others in the collection have exterior tool impressions on the corner of the vessel but they do not conform to SLW for various reasons. Other pots represented at the Riverview Site 1 include some thick sherds similar to Old Women's phase pottery. Thus, two Sandy Lake Smooth notched vessels have been identified at the Riverview site.

**5.4.8 Minor Occurrences.** Several small collections from the MMMN yielded a few SLW vessels. They are described briefly below.

The Richards Village site (DhLw-1) is located near the town of Killarney in southwestern Manitoba. Both M28 (R3-8) and M29 (R3-9) rim sherds are thin, parallel vertical textile impressed, plain, have a vertical profile, and are grit tempered. These appear to represent two Sandy Lake Corded plain vessels.

The Gould site (DiMe-19) is also part of the *Makotchi Ded Dontipi* locale and it is located about 50 m north of the Duthie site. One Sandy Lake Corded plain vessel (#S-5) was found on the top of a large dune, which was stabilized until roadbuilding activities disturbed part of it (this destruction is detailed in Section 5.4.4). A Besant (#S-29) and Prairie Side-Notched projectile point (#S-1) were also recovered along with a variety of other Swan River Chert and Knife River flint tools. Three thick (~10.0 mm) sherds, which are similar to a few found at the Duthie site, were also found. It is assumed that the inhabitants of the Gould site were related in some way to those of the Duthie site given the close proximity of the site and the similar artifacts. However, the Besant projectile point is not very commonly found in the *Makotchi Ded Dontipi* locale.

The Homer Davis site (DjMf-6) is located along the Souris River in southwestern Manitoba. Number M539 is a parallel vertical textile impressed, plain, straight rim sherd which may be Sandy Lake Corded plain. Other sherds have certain attributes of SLW. Blackduck vessels are also represented in this collection.

**5.4.9 Summary.** Section 5.4 has demonstrated the presence of pottery in southwestern Manitoba which has the attributes of SLW. Although this idea has been suggested over several years (Nicholson 1988; Taylor 1994a), these sites document the case further on a regional basis. Individual SLW vessels are also identified (Table 5.2) totalling more than 100 vessels in the study area. It is also interesting that there are shell tempered vessels from three different locations in this region (Figure 2.11), namely Lovstrom (several sherds), Lowton (n=32 sherds), and the Gordon Randall sites (n=1).

Although some of this information has been presented previously, it has not been compiled before this thesis.

### **5.5 West Central Manitoba**

While a few small collections from central western Manitoba are housed at the MMMN, there is still a paucity of archaeological investigations in this area (Hanna 1982:34). As previously mentioned, SLW was identified at the Tailrace Bay site (Figure 5.1) and similarities were noted with pottery from Site GRS-1 (a.k.a. Harbour Bay ceramic site) in central western Manitoba by Mayer-Oakes (1970:372):

The Sandy Lake ware described by Cooper and Johnson (1964) is clearly present in small amounts in the upper part of Tailrace Bay. The possibility that this distinctive type may be associated with wild rice processing activities is an interesting functional interpretation. Because we have no evidence for wild rice in the Grand Rapids area however, we must confine our interpretation to the temporal indication of late and post-Blackduck occupation suggested by Cooper and Johnson.

It is interesting that this notation by Mayer-Oakes (1970) has gone virtually unnoticed for roughly 30 years, in that researchers have not identified any other SLW in this area. His (Mayer-Oakes 1970:197) descriptions and photographs of this pottery indicate that it is very likely SLW. Hanna (1982:186) even identified two per cent of the Aschibokahn site pottery as 'undifferentiated Woodland' or 'other'. The former, as identified by Evans (1961), is now known to be SLW.

A large scale excavation of about 100 m<sup>2</sup> took place at the Tailrace Bay site in 1961 and 1962 (Mayer-Oakes 1970). Initially, Mayer-Oakes (1970:191, 195) used the vague descriptive terms 'semi-differentiated Woodland' to describe late pottery from the Tailrace Bay site. Some of the sherds from this site also resemble those assigned to the Duck Bay or Bird Lake complexes (Lenius and Olinyk 1991). He identified the pottery as Laurel, Blackduck, and 'Woodland ware' which he described the latter as:

A group of sherds of similar character and varying surface treatment. Two varieties are distinguished, 'A' and 'B'. 'A' is a catchall, while 'B' is a much more clearly perceived type, present in both 1961 and 1962 collections. It is probably closely related to the Sandy Lake ware types described by Cooper and Johnson (1964) (Mayer-Oakes 1970:195).

Later in the report, Mayer-Oakes (1970:197) identified type 'B' pottery as SLW. The author agrees with this identification since it is similar to descriptions in Arthurs (1978), judging by the photographs and attribute list (Table 5.17). It may be that since the Tailrace Bay site is outside of the perceived distribution of this ware, Mayer-Oakes' (1970) identification has been ignored by other researchers. Neither Mayer-Oakes (1970:350-354) nor Tamplin (1977) included SLW in the cultural chronology of the Grand Rapids region, even though Mayer-Oakes (1967:367; 1970:197) identified it there.

Type 'A' of the 'Woodland ware' from the Tailrace Bay site is cordmarked but it is not descriptively different from the textile impressed 'B' (Mayer-Oakes 1970:194). There is only one photograph of a type 'A' sherd (Mayer-Oakes 1970:197). However, it is even more likely SLW since the vessels are cordmarked, have straight rims, and a similar interior decoration to type 'B'. Both cordmarked and textile impressed exterior surface finishes are represented on northern examples of SLW (e.g. Arthurs 1978). Nevertheless, given that Mayer-Oakes (1967:367) had identified Selkirk and more recent research has indicated a preponderance of it in the Boreal Forest (Hlady 1971), some of these vessels may indeed be Selkirk or a syncretism with SLW. Mayer-Oakes (1970:242, 245) indicated that some of the Tailrace Bay pottery was Clearwater Lake Punctate and Sturgeon Punctate (MacNeish 1958:167), although individual rim sherds were not identified or illustrated. Obviously, he (Mayer-Oakes 1970) was able to discern between SLW and Selkirk pottery.

**5.5.1 Swan River Valley.** At the MMMN, the author examined two small accessions from along the Swan River in Manitoba. Small collections from the Gust (FbMf-1) site, labelled as 'Swan River complex', and FbMf-5 (noted as 'Smith Creek complex') were examined. Most of the rim sherds from these collections were clearly not SLW but were instead Selkirk pottery or Duck Bay Stamp type. However, a few sherds

**Table 5.17. Compiled attribute list for Sandy Lake ware<sup>1</sup> from Tailrace Bay site, Manitoba (from Mayer-Oakes 1970:195-196).**

Attribute	Details
Paste/Temper	non-porous, fine paste; gravel and grit temper that is 0.5-1.5 mm diameter
Hardness	2.0 on the Moh Scale
Thickness	about 6.0-7.0 mm in body and lip, where measurable; varies only about 1.0 mm between lip and body
Manufacturing Method	no evidence of coil breaks, breakage is rough; walls are thin and well made; superficial mottled carbon areas (burnt after made); paddle and anvil, probably only anvil (?); firing at a fairly high temperature in a non- or partially reducing atmosphere
Surface Finish	fabric impressed on body and rim; inside roughly smoothed; none are smoothed
Vessel Form <sup>2</sup>	rim flares out slightly from a somewhat constricted neck; diameter at lip is about 14.0 cm; angle of constriction suggests that max. body diameter is in the top half or middle of the pot
Decoration	"widely spaced, elongated triangular impressed incisions, pressed harder at interior of pot lip to form interior corrugations at inner edge of lip. . . . found on all type B sherds at close and regular intervals, with the wider part of the triangle at the interior of the lip" (Mayer-Oakes 1970:197).

<sup>1</sup>Also known as type "B" of 'Woodland ware' or 'semi-differentiated ware'; the author believes that type 'A' is also SLW.

<sup>2</sup>Type 'A' are cordmarked but they have a straight rim form and similar decoration to type 'B'.

were thin walled, straight rimmed, flat lipped, and had parallel vertical textile impressed exteriors with lip notching. Such attributes indicated that they were likely SLW. Some sherds from FbMf-5 have thin, parallel vertical textile impressed exteriors and various lip treatments. Another sherd (#10) was smoothed and had a straight rim of which the lip brim had been modified with a tool to produce a crimped motif like that seen on some SLW. A few others also have a crimped lip.

Meyer (1998:73) examined collections from the Swan River Valley area, as shown to him by Gary Wowchuk, who is a resident avocational archaeologist. Much of the pottery in these collections was identified as Duck Bay ware (Meyer 1998:73). Two thermoluminescence dates in the A.D. 1300s and two <sup>14</sup>C dates assessed to the A.D. 1400s came from two sites, FbMf-5 and FbMf-1, along the Swan River (Meyer 1998:73).

Sandy Lake ware was identified at the Tailrace Bay site (Mayer-Oakes 1970) in central Manitoba. Duck Bay Notched Lip, Undecorated, and Decorated Lip types from the Swan River Valley and from the Goldsworthy site, along with shell tempered sherds found at the relatively nearby Cote site in Saskatchewan (Figure 2.11), suggest that there

is more SLW in west central Manitoba. There are similarities between SLW and some types of Duck Bay ware (see Sections 4.2.5.1 and 5.5.2) which is also found at sites in this area.

**5.5.2 Aschkibokahn (FbMb-1).** E. Leigh Syms of the MMMN generously lent some photographs of Duck Bay ware and some sherds from the Aschkibokahn site (Figure 5.1) were examined there. Other examples from this site were obtained from the Manitoba Heritage Branch repository for inspection. Numerous southeastern Manitoba site collections at that repository and at other locations contained many examples of this ware (e.g. Tulabi Falls, Lockport, Wanipigow sites). Therefore, many Duck Bay vessels from different areas were examined by the author, even though not all 410 vessels from the Aschkibokahn site were inspected. Although purists may not like the idea that some Duck Bay ware is similar to SLW, it is evident that this is the case. As indicated in Section 4.2.5.1 and Table 4.2, many attributes are comparable.

The Aschkibokahn site is located on west central Lake Winnipegosis. Excavations were first reported on by Snortland-Coles (1979). According to Hanna (1982:4-5), Duck Bay Punctate (now referred to as Stamp) constituted 47 per cent, the Notched Lip type accounts for 26 per cent, and Duck Bay Undecorated consists of 27 per cent of the ware. Blackduck, Selkirk, and Clearwater Lake Punctate potteries were also identified at this site (Hanna 1982). Of the Duck Bay ware, some of the Duck Bay Undecorated (#M01 4030; K285, and F-876) as well as Duck Bay Notched Lip (M01 2579, MD-4813) appears to be SLW. Number 452, of the Duck Bay Decorated Lip type, is similar to SLW with lip decoration. Others sherds from Aschkibokahn identified as Duck Bay ware resemble Selkirk pottery, with amorphous textile impressed exteriors, particularly the Pehonan complex pottery (e.g. Meyer 1981).

The finding of vessels at the Aschkibokahn site (Hanna 1992; Snortland-Coles 1979) that are similar to SLW indicates a number of possibilities: 1) Sandy Lake people occupied the site with those who made what is known as Duck Bay Stamp; 2) SLW

developed from Duck Bay ware since sites with it have early late precontact dates; 3) Duck Bay ware developed from people leaving the North Dakota/western Minnesota area early in the late precontact period; 4) the Duck Bay Stamp type is a valid archaeological entity but the other types may be subsumed under the previously existing Sandy Lake plain and notched variants or 5) as Hanna (1982) postulated, exogamy accounts for the diversity of vessels in that some women came from outside of the core area (that site).

Snortland-Coles (1979:34, 205) described a plain surfaced utilitarian vessel represented at the Aschkibokahn site which is a fairly unusual recovery in that area. This finding may represent a Sandy Lake Smooth plain vessel. Incidences of less frequent decoration are cord-wrapped object, incising, pie-shell crimping, and fluting (Hanna 1982:5). These decorative applications are also found on SLW, with the exception of incising.

Malainey (1997:201) completed an analysis of residue on 18 sherds from the Aschkibokahn site. As anticipated from a Boreal Forest site, beaver, fish/corn, and plant were deciphered in vessel residue (Malainey 1997:201). It is likely that the fish/corn residue probably reflects the processing of fish in a pot, since it was more common than maize in Boreal Forest sites. However, one cannot discount the possibility that residents of the Aschkibokahn site occasionally traded for maize.

## **5.6 Saskatchewan**

The author decided to examine several sites in southern and central Saskatchewan (Table 1.2) to determine if SLW did extend into this province, given that several researchers (Dyck and Morlan 1995; Malainey 1995b; Walde 1994) have suggested this possibility or have noted Sandy Lake influence in Saskatchewan pottery. Given that SLW is found in different environmental zones in other provinces or states, four sites were selected from different environmental zones: Sanderson and Mortlach from the Grasslands, Lozinsky from the Aspen Parklands, and Goldsworthy in the Boreal Forest. Two sites were chosen from the Grasslands, since they are both close to the

Gainsborough/Souris locality and the *Makotchi Ded Dontipi* locale, where SLW has been identified. It was suspected that similar pottery might be found along the same waterway, the Souris River, in Saskatchewan. Other reasons for choosing these particular sites are presented in the sections about each site. The artifacts were obtained from the Royal Saskatchewan Museum and other collections were examined while there (Table 1.2). Since two theses (Malainey 1991; Walde 1994) had already been written about late precontact southern Saskatchewan pottery, it did not seem logical to repeat analyses of artifacts that have been already studied in a very detailed manner (for further information on this matter consult Section 4.2.9). Instead, selected sites from different parts of the Mortlach/Wascana distributions were examined, with the results presented below.

**5.6.1 Sanderson (DhMs-12).** The multi-component Sanderson site is located along the Souris River near Estevan, Saskatchewan (Figure 5.1). It is situated about 19 km northwest of the Long Creek site (Malainey 1997:237; Wettlaufer and Mayer-Oakes 1960) which is a multi-component site with Mortlach artifacts. Another reason for choosing the Sanderson site, other than location, is that a decorated lug or loop handle was found there (Malainey 1997:208). These appendages are uncommon in southern Canadian Plains sites, although as previously mentioned, one vessel from the Duthie site in southwestern Manitoba has five such handles (Figure 4.2). However, that specimen has tool impressions on the loop handles rather than dentate impressions (Malainey 1991:208). Hanna (1976:36) and Syms (1979b:299) suggested that one mortuary vessel from the Moose Bay mound, in Saskatchewan, had four handles which were removed prior to firing. Malainey (1991:209) also described other pottery from the Sanderson site which was similar to the Duthie site finds, which intrigued the author. One sample from the Sanderson site has dentate impressions and small punctates that are similar to a highly decorated vessel portion from the Duthie site. These two similarities may indeed indicate cultural connections between the two sites, particularly when many of the *Makotchi Ded Dontipi* sites also have Mortlach pottery (e.g. Bradshaw, Twin Fawns).



In the late 1980s, prior to the Sanderson site being flooded by the Rafferty Dam reservoir, archaeologists from the Saskatchewan Research Council excavated only the upper portion of the site (Malainey 1997:237). This Mortlach component likely dates to early contact times as evidenced by the recovery of a glass trade bead and a radiocarbon date of  $310\pm 75$  B.P. (Malainey 1997:237). Walde (1994:215) reported 228 projectile points from this site, of which 25 per cent were made of Knife River flint, a lithic material often found in Mortlach components.

Malainey (1991:207) studied 43 vessels from Block 1 of the Sanderson site. Since the excavated component was Mortlach, she found that most of the vessel profiles were wedge shaped ( $n=16$  or 36.4 per cent). The rest are Straight Rim/Angled Rim ( $n=9$ ; 20.5 per cent), Straight ( $n=8$ ; 18.2 per cent), S-Profile ( $n=2$ ; 4.5 per cent), Square Wedge ( $n=2$ ; 4.5 per cent), Miscellaneous ( $n=1$ ; 2.3 per cent), and six undetermined (13.6 per cent) (Malainey 1991:208). The first three profiles are also present in SLW. Most decoration is in the form of cord wrapped tool ( $n=16$ ) and dentate ( $n=14$ ) impressions, although cord impressions, incised lines, sharp edge tool impressions, notches, and punctates were found rarely on some pots (Malainey 1991:208). Although Malainey (1991:209) noted that plain, check stamped, and cord roughened surface finishes were the most common, 'rolled cord' and textile impressions were also found on some samples. While there are similarities between Mortlach pottery and SLW, as suggested by Walde (1994:145-148), there are more similarities to Wascana ware defined by Malainey (1991:324-341) and as argued by her subsequently (Malainey 1995b:183) (see Section 4.2.9).

Walde (1994:400) had a larger sample of the Sanderson site to examine, since cataloguing had been completed at the time that he analyzed the sherds. He concluded that out of the 156 vessels identified, 107 (69.23 per cent) were unassignable, 23 (14.74 per cent) had Vertical rims, 13 (8.33 per cent) had Wedge, seven (4.49 per cent) had Angled, and five (3.21 per cent) had S-rims (Walde 1994:401). These percentages differ

from Malainey's (1991:208) assessment. Walde (1994:401) noted that the most common surface finishes at this site were, in descending order, Obliterated, Vertical Cord Roughened, and Check-Stamped, with one textile impressed vessel. Again, this assessment differs from Malainey's (1991) findings. Regardless of these differences, a significant number of vessels are represented at the Sanderson site.

Malainey (1997:201) examined residue from 15 sherds that came from the Sanderson site. She determined that 11 residue signatures indicated that large herbivore was cooked in pots at this site with another one indicating large herbivore and plant or marrow (Malainey 1997:201). Malainey (1997:201) also concluded that one pot had plant remains, another had fish and plant, and the remaining one suggested fish/corn residues. These results indicated a reliance on bison which is not surprising given that the Sanderson site is located in the Grasslands. Also, a variety of other foods were utilized at this site as evidenced by the other residue findings and varied faunal remains (Magee 1997).

**5.6.2 Mortlach (*EcNl-1 and EcNl-10*).** The author decided to examine some of the pottery from the original Mortlach site (Figure 5.1) since it had some similarities to SLW (e.g. Wettlaufer 1955:20-21, 26-28, 87 #1, 2, 89:1-5). This site is also located in the southern part of the province. The Long Creek site (Wettlaufer and Mayer-Oakes 1960) pottery was also examined but these vessels did not appear similar to SLW. Another factor in deciding to examine the sherds from the Mortlach site is that several researchers (Dyck and Morlan 1995:193; Malainey 1995b:183) have suggested similarities between the Moose Jaw culture and SLW. Reid (1972) indirectly proposed this idea when he noted similarities between his types and pottery from southern Saskatchewan.

In the Moose Jaw focus, one rim sherd (S61-2-N<sub>2</sub>W<sub>4</sub>; 231&232) has a straight profile, flat lip, is check stamped, and undecorated. Given that this site has a Mortlach component, it should likely be identified as part of that grouping. However, there are

similarities to SLW. Another rim sherd (#160) of the Moose Jaw focus has interior rim tool impressions which have deformed the lip somewhat. It has an amorphous textile impressed exterior surface finish. Nevertheless, the decorative application and straight profile, along with the flat lip, and general thinness suggest that there are similarities between some sherds at the Mortlach site and SLW.

**5.6.3 Goldsworthy (FdMw-1).** This very large site is located in central eastern Saskatchewan and is affiliated with very old stone fishing weirs along the Barrier River, an upper branch of the Red Deer River (Meyer 1998:47-48) (Figure 5.1). Much of the Goldsworthy site is cultivated and has been surface collected by professional as well as avocational archaeologists for several decades (Meyer 1998:44-45). Archie Campbell, a member of the latter set, explained that this river crossing yielded diagnostics of everything from Agate Basin to metal points (Meyer 1998:45). Most of the pottery from this site can be assigned to the Late Woodland period which Meyer (1998:43) summarized as consisting of: a small amount of Blackduck and Mortlach; 38 Duck Bay ware vessels of the Rainy River composite (one Duck Bay Stamp type and the rest Duck Bay Notched, Duck Bay Decorated Lip, and Duck Bay Undecorated); and a subset of seven vessels with Selkirk traits, of which six are Rainy River-Selkirk syncretisms.

The relevance of pottery from the Goldsworthy site to this thesis is that some of the vessels classified as Duck Bay ware do in fact resemble SLW (David Meyer, personal communication, 1999). Given that the author believes that Duck Bay Notched Lip and Duck Bay Undecorated types are likely SLW, this does not negate Meyer's (1998) identification. Rather, the parallel vertical textile impressed sherds from the Goldsworthy site are likely SLW. Having examined the collection, the author believes that three Duck Bay Notched Lip vessels (#26, 30, and 32) are significantly similar in attributes to be affiliated with SLW. Several vessels (numbers 13, 23, 33, 39, 42, and 45) of the Duck Bay Undecorated types conform to the attributes of SLW. Two plain vessels from the

Goldsworthy are almost unknown for Selkirk assemblages (Meyer 1998:73) but these unusual vessels may be accounted for if identified as Sandy Lake Smooth type.

Near the Goldsworthy site, the river bed contains large stones, some of which form enclosures that were probably the bases of fish traps created by Aboriginal people (Meyer 1998:47-48). Enormous numbers of fish of several species make an annual spawning run up the Barrier River, providing an easily accessible food source (Meyer 1998:47). This site is located in the southern edge of the boreal forest, so that typical animals from that vegetative division would have been hunted such as: moose, elk, mule deer, bears, beavers, woodchucks, rabbits, muskrats, migratory waterfowl, and other birds (Meyer 1998:48). Thus, various plant foods would have been gathered during different seasons at the Goldsworthy site, although fishing was probably a prime subsistence activity.

**5.6.4 Lozinsky (FdNm-51).** The Lozinsky site was formerly known as FdNn-6 and is in a cultivated field which was systematically surface collected and excavated (Malainey 1995b:85, 94-95). This site was selected for comment since it is located in the central, southern part of the Parkland, about 50 km northeast of Saskatoon (Malainey 1995b:85) (Figure 5.1). Both Malainey (1991, 1995b) and Walde (1994) have thoroughly analyzed the pottery from this site, so it did not seem logical to re-analyze it (see also Meyer 1981, 1984; Meyer and Epp 1990). Instead, this site provides an example of Wascana ware (Malainey 1991, 1995b), or northern Mortlach if one agrees with Walde (1994), to compare with the attributes of SLW. The similarity between SLW and Wascana ware has been proposed by Dyck and Morlan (1995:193) as well as Malainey (1995b:183), so this provided an opportunity to decide if this is the case. One thermoluminescence date was assessed at A.D. 1670±65 (Dur09TL136-1BSpfg) although this sherd may be somewhat older, according to Malainey (1995b:166). One McKean, one Duncan, and two Hanna points were also found at this site, indicating a likely earlier component.

Malainey (1995b:156-158) noted that 180 pottery fragments, including 23 rims, were surface collected at the Lozinsky site in the late 1970's, resulting in the identification of Vessels #43-54. Other pots (#1-42) were identified by representative rims recovered during the 1987 field school (Malainey 1995b:127-141). These are repositied at the Royal Saskatchewan Museum but they were obtained by the author to examine. Several sherds from the Lozinsky site bear resemblances to SLW. Vessel number 7/43 (#6044, etc.) is a thin walled vessel with a single row of punctates, with a light brushing on the exterior (Malainey 1995b:127, 157). Some attributes, such as the row of punctates, thin walls, flat lip (although slightly expanding) are similar to SLW in northwestern Ontario. However, the surface finish is not typical of pottery from that area. Other vessels (1-10, 44-46, 48-50 in Malainey 1995b:128-129, 157-158) also have a single row of punctates, and the collection has a variety of inner, lip, and exterior treatments. Vessel #54 is similar to Sandy Lake Smooth plain variant but this sherd is such a small fragment that it would not be valid to name it as such.

As a result of examining artifacts and reading the thorough reports of Malainey (1991, 1995b) and Walde (1994) about the Lozinsky site, it was determined that SLW is not present *per se*. However, it was interesting that almost every sherd had one or more attributes which are common to SLW but the combinations expressed on these rims would not be quite similar enough. For example, Vessel 52 has a parallel vertical textile impressed surface finish, oblique cord wrapped object impressions on the lip, and is thin. All of these attributes would conform to SLW, except that the lip shape is expanding. Numerous instances of sherds with several attributes of SLW were found. This finding does indicate that potters from this site may have been influenced by those that made SLW.

### **5.7 Summary**

This section of the thesis has demonstrated that there is much more SLW than had previously been documented (Table 5.2). Some thin, non-Selkirk pottery in and around

the Swan River Valley in Manitoba may also be related to SLW. Along with the previously published description of SLW at the GRS-1 and Tailrace Bay sites (Mayer-Oakes 1970), the finding of several vessels at Aschkibokahn that are similar to SLW indicates that these people(s) were also present much farther north, into central Manitoba. Duck Bay ware was examined from the Goldsworthy site in Saskatchewan and also at numerous sites in southeastern Manitoba (Table 1.2). Given that the author believes that Duck Bay Notched Lip and Undecorated resemble SLW, it is not surprising that comparable attributes are found on the latter ware from the Goldsworthy site (Meyer 1998). David Meyer (personal communication, 1999) has also noted these similarities. Pottery from several sites in southern Saskatchewan also reveals similarities to SLW. The Lozinsky site pottery, from the Saskatchewan Parklands, had many vessels which had attributes resembling those of SLW. However, these vessels was not close enough to identify them as this ware. Although Old Women's phase vessels are not similar to this ware, as discussed in Section 4.2.10, Mortlach phase/aggregate has several attributes in common (Walde 1994:145-147). Thus, the distribution of SLW extends much farther northwest than previously determined in other studies (Figure 5.6).

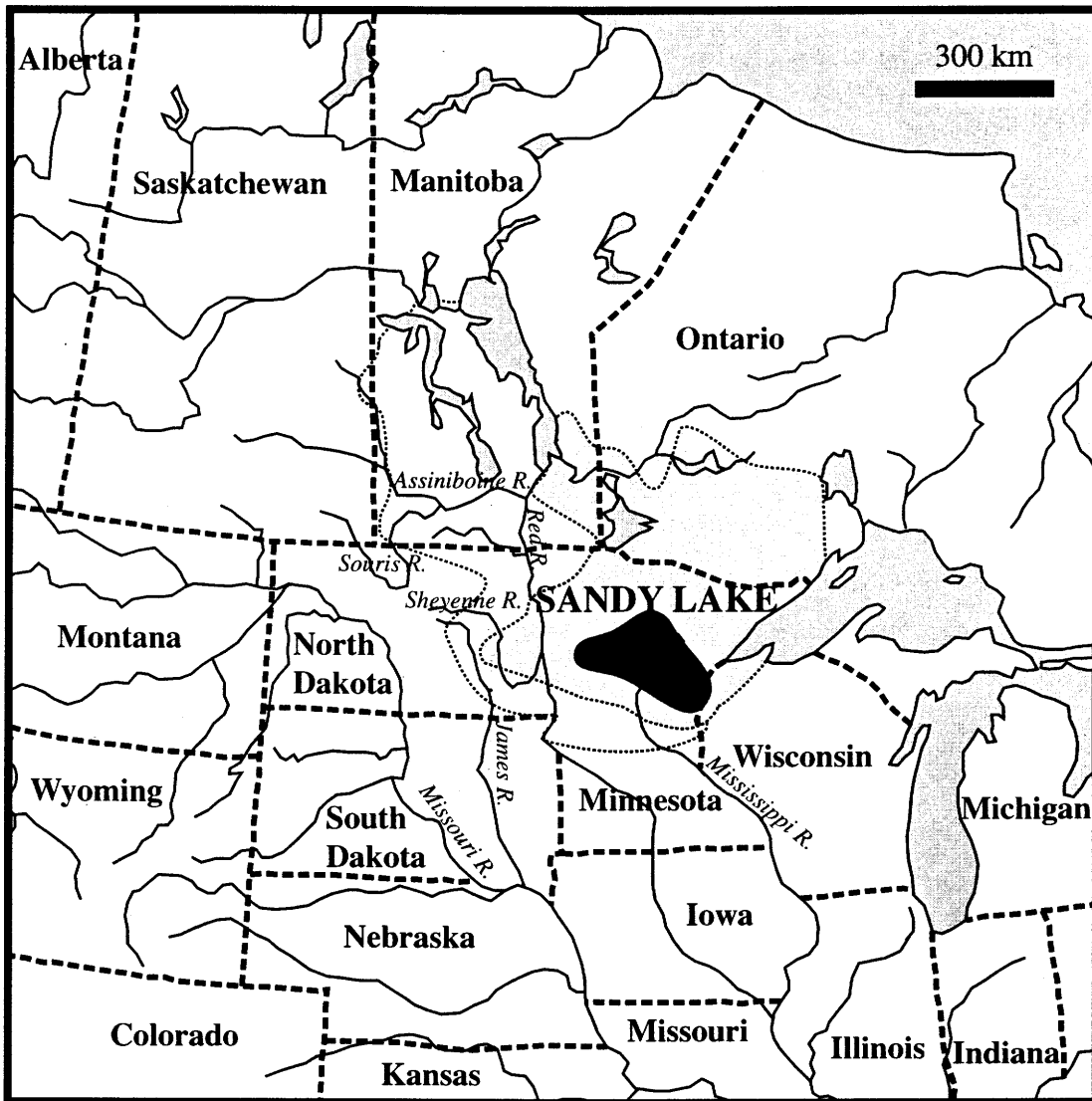





Figure 5.6. Revised distribution of Sandy Lake ware from about A.D. 1000 - 1750.

-  Original extent (Cooper and Johnson 1964:475).
-  Results of the Lake Superior Basin Workshop (Participants 1987:58).
-  Extent of Sandy Lake ware as recognized in this thesis.

## **CHAPTER SIX: DISCUSSION AND CONCLUSIONS**

### ***6.1 Introduction***

Chapter One introduced the subject of SLW and outlined the rationale, problems, goals, and methodology of the project. The next chapter outlined the attributes originally identified as characteristic of this ware and added contemporary interpretations dealing with classification. Chapter Three reviewed other details of SLW, the *Psinomani* culture, and archaeological implications of the ware. After discussing these related aspects of the archaeological culture, a better understanding of classification controversies could be made. Thus, Chapter Four discussed related taxonomies and some suggestions were made in order to clarify classification of SLW. Another important observation discussed in this section was the finding of syncretic vessels of SLW and other wares. Chapter Five worked towards a solution to determining the northwestern extent of SLW, by presenting information from various sites across Manitoba and Saskatchewan. Numerous sources of SLW and related pottery from all of its extent were examined to assist in this process. This final chapter summarizes the results of previous sections and presents some concluding statements.

Three major problems prompted this study of SLW, the most extensive review to date of this archaeological entity across its large areal extent (Figure 1.1). The first problem that the author identified was classification of this ware and related Late Precontact/Postcontact wares across the vast area where it is found. This issue is hardly surprising since pottery classifications are continually being revised in central North America as new knowledge is acquired. The second research objective of this thesis was



to discuss aspects of the *Psinomani* culture other than SLW. There were many variables to be addressed such as: temporal and regional differences, origins, trade relationships, subsistence, associations, and fate of the people(s) who made it. The northwestern extent of SLW was the third problem addressed in this project. It had not been studied previously, other than in a cursory fashion by Participants (1987). This thesis is also the first study of the frequency of occurrence of SLW in western Canada where it has largely been ignored except in southeastern Manitoba and northwestern Ontario. It also provides the first summary of shell tempered pottery found in central Canada. Each of the problems and the results of their study are presented in this section.

## **6.2 Discussion of Results**

**6.2.1 Research Objective #1.** The first research objective was to clarify classification problems dealing with attributes and the type-variety system first used to categorize SLW. Most archaeologists recognize Laurel and Blackduck as having a fairly well documented set of attributes, whereas SLW was not so readily identifiable. Many researchers are apparently reluctant to identify this ware outside of north central Minnesota, even though other wares have a similar or even larger distribution (e.g. Laurel, Blackduck, Selkirk). Some reviews of cultural chronologies still do not include this archaeological entity, even though it has been recognized for over 35 years. For example, Cooper and Johnson (1964) stated that it was found in Manitoba but researchers have neglected to identify it in cultural chronologies of the region. Not surprisingly, two early archaeologists, Vickers (1950) and MacNeish (1958), had already described this pottery although one had named it as part of the Pelican Lake focus and the other as Cemetery Point Corded type. Other researchers soon identified SLW (Carmichael 1979; Mayer-Oakes 1970; Nicholson 1988; Trottier 1973, etc.) but still there seems to be reluctance to use the term since it was perceived to only be found in Minnesota. It is hoped that this thorough review of past research will indicate the importance of the Sandy Lake peoples in precontact Manitoba.

To overcome these classification problems, the author reviewed the original attributes of SLW proposed by Cooper and Johnson (1964). Revised trait lists as suggested by Peterson's (1986) western Minnesota study and Arthurs' (1978) northwestern Ontario samples were examined. Peterson's (1986) multitudinous attribute list of SLW was likely based on an unpublished one compiled by Elden Johnson and published in Gibbon (1976, 1994:26). She (Peterson 1986) reduced the range of SLW attributes by sorting and chi square analysis. Cooper and Johnson's (1964) discussion of attributes was somewhat outdated, given how many different discoveries have been made since that time. Arthurs (1978) outline of SLW in northwestern Ontario was not detailed enough. However, Peterson's attribute list included too many variables, so that it is difficult to ascertain if a given sherd is SLW. After reviewing many articles about SLW, an attribute list reflecting contemporary ideas about the ware was compiled (Table 2.4), taking into account regional variations.

Peterson (1986:170) proposed that temper would be a more appropriate divider for types of SLW (see Section 2.3.6 for more information). She (Peterson 1986:171) suggested that the ware be broken into Sandy Lake Grit temper and Sandy Lake Shell temper types, with subsequent divisions being made as determined by exterior surface treatments. Sherds with shell and grit were grouped with the Shell temper type. This classification differs from the original one by Cooper and Johnson (1964), where types were based on exterior finish with decoration providing the variants. Peterson (1986:170) proposed this idea because she found that "if exterior surface treatment is chosen as the controlling factor in three dimensional chi-square tests, the relationship between Temper and Decoration is lost." Her findings were reproduced in Figures 2.9 and 2.10 for researchers to examine and use if applicable. A problem with splitting the ware into Grit and Shell Temper types is that almost all of the SLW found in Canadian sites is grit tempered, so that there would only be one type across a large area. Since the surface finishes seem to indicate some regional variation, it is logical to use these as the basis for

the recognition of types, at this time. The fact that some sherds have both shell and grit temper would seem to suggest that this method is not ideal for splitting types. Although Peterson's (1986) methods may work well in north central Minnesota where SLW is more often shell tempered and there are more vessels, it is more appropriate to describe vessels in other areas using surface finish to split the ware into types. Essentially, there are problems with the way SLW was initially categorized, whether split by exterior surface finish or by temper as proposed by Peterson (1986), since the 'ware' does not conform to descriptions used in central North America (Calabrese 1977:30; Butler and Hoffman 1992:6; Meyer 1998:49). Sandy Lake ware may actually represent several wares, but at this time, the current typology is recognized by many researchers whereas a new term might not be as useful in making an identification.

Several regional variations in SLW are apparent across the large areal extent where it is found, as indicated by a number of pottery attributes. For example, the original description by Cooper and Johnson (1964) detailed Minnesota samples which were Sandy Lake Corded, Sandy Lake Smoothed, grit or shell tempered, and they had either plain or various forms of lip and interior notching. Arthurs (1978) identified many SLW vessels in northwestern Ontario, which is really a regional variant of this ware having parallel vertical textile impressed surface finishes and grit temper. It may be related to Selkirk pottery from that region, given that there are some SLW/Selkirk syncretisms. Birk (1979:178) then proposed the Sandy Lake Stamped 'variety' (really a type) found in north central Minnesota in the Mississippi Headwaters region. Two check stamped and shell tempered vessels were identified at the Lowton site (Figure 2.11), indicating a further northwestern extent of this type of SLW. The additional data reviewed in this thesis from Manitoba and eastern Saskatchewan indicate that parallel vertical textile impressed, obliterated, and smoothed surface finishes are found there.

Having determined that exterior surface finish is the most useful way to indicate patterns of distribution of SLW, several new types have been introduced in this thesis.

These additional types are Sandy Lake Textile Impressed and Sandy Lake Obliterated. The latter term is introduced as a substitute for the description Smoothed Over Cord Marked used by Peterson (1986). It is sometimes difficult to distinguish between cord marked surface finishes, which are paddled specimens that have a widely spaced cord pattern, and parallel vertical textile impressed surface finishes which appear superficially similar. In this case, discernible interweaving of cordage is visible as suggested by Saylor (1978a:50). All of the northwestern Ontario SLW (Arthurs 1978), much of the Manitoba samples, and a few North Dakota examples are textile impressed. Given the thinness of SLW, it is logical that many of these vessels are textile impressed since thin vessels are easily supported by a textile mold (Goltz 1991:3). Having viewed samples of Minnesota SLW and photos of Peterson's samples, some of these vessels are also textile impressed.

As discussed in Chapter Four, there are several different pottery types that are similar to SLW in attributes, dating, and/or distribution, such as: Blackduck, some Selkirk complexes, Ash Rapids Corded, Duck Bay ware, Oneota, Vickers focus, Northeastern Plains Village ware group, Mortlach/Wascana, and Saskatchewan Basin complex. Although there are a few noteworthy similarities between each of these pottery manifestations and SLW, most are not close enough to warrant identification as SLW. However, the author has advocated dispensing with the term Ash Rapids Corded which was a term proposed by Reid and Rajnovich (1980) to describe pottery very similar to SLW found around Lake of the Woods, in northwestern Ontario. This suggestion does not negate the research that they completed, rather the author believes that they were describing SLW, which is found around Lake of the Woods (Participants 1987). Further discussion about this subject is found in Section 4.2.4. The Cemetery Point Corded type, which was originally categorized as part of the Manitoba focus (but vaguely linked to the Selkirk focus in MacNeish 1958) is so comparable to SLW (Arthurs 1978:62; Reid and Rajnovich 1978) that this type should also be dropped. A connection was affirmed between SLW and Vickers focus sites as proposed by Nicholson (1991). As Nicholson

and Hamilton (1997:31) suggested, much of the pottery from these sites is SLW, along with some Plains Village wares, as well as Vickers and Mortlach pottery. However, this study presents detailed information about SLW from these sites, focussing on SLW.

Several conclusions about the classification of SLW were made. A comparison of traits and information suggests that Ash Rapids Corded (Reid and Rajnovich 1980) is a redundant term. Slight differences in the rim height of this pottery was the remaining difference between this pottery and SLW, while there is an areal and temporal overlap. The earlier, more often used term SLW takes precedence. MacNeish's (1958) Cemetery Point Corded type is seldom used by archaeologists as a term of reference but it is also redundant. Although he introduced this type before Cooper and Johnson's work (1964), almost all researchers have used the name SLW. Lisbon Tool Impressed, from eastern North Dakota, is SLW as stated by Michlovic and Swenson (1998).

After comparing Duck Bay ware with known attributes of SLW, it was noted that Duck Bay Notched Lip, Duck Bay Undecorated, and Duck Bay Decorated Lip types were very similar in attributes, time frame, and areal distribution. The stipulation is that these vessels must have a corded or parallel vertical textile impressed (sprang) exterior surface finish, as stated by Lenius and Olinyk (1990:79), rather than the amorphous (twined) exterior that is found on many Selkirk vessels. Although some researchers have included vessels with the latter surface finish, it would be appropriate to differentiate between the two. These conclusions suggest that Sandy Lake notched and plain variants (Cooper and Johnson 1964), which take precedence in the literature, are found in some sites of the Duck Bay complex. Duck Bay Stamp, the most common type of Duck Bay ware, remains classified as it was previously.

**6.2.2 Research Objective #2.** The second research objective that this thesis dealt with was the cultural implications of SLW, such as: temporal indications, origins, trade relationships, subsistence, associations, and fate of the people(s) who made it. Some determinations or suggestions of this study will be discussed in the following section.

Few  $^{14}\text{C}$  dates have been assessed on samples from components with SLW (Table 3.3). However, the available information was compiled in order to see if any temporal patterns were apparent and to provide an updated list. The oldest dates would appear to occur in eastern North Dakota at the Jamestown Mound (Snortland-Coles 1985) and in western Minnesota at the Mooney site (Michlovic 1987) as discussed in Section 3.7. By including these dates, it is suggested that SLW may have appeared in these regions at about A.D. 950, rather than A.D. 1000-1750 (Birk 1979:175). An early  $^{14}\text{C}$  date from the Scott site, which is so often quoted in SLW studies, is more likely associated with the earlier Blackduck association at this site (Lass 1980:31).

Two of the youngest dates associated with SLW are from the Basswood Shores site (Justin and Schuster 1994) in Minnesota and the Long Sault site (Arthurs 1986) in northwestern Ontario. Both of the radiocarbon samples were assessed at about 200 B.P. The protocontact Bradbury phase sites, located around the Mille Lacs, Minnesota region age estimates are not based on  $^{14}\text{C}$  dating. Rather, these sites have Postcontact artifacts found in association with SLW, Ogechie series, and Oneota as discussed in Section 4.5. Thus, the Bradbury phase sites represent late dating SLW contexts.

Given that there are so many sites with SLW, and that they cover a period of more than 750 years, it is curious that archaeologists have not been able to distinguish some kind of temporal changes. Peterson (1986:173-174) has suggested that some temporal indicators might be present in her sample such as: ridged interior neck forms become slightly more common in later times; cut notched lip forms may tenuously indicate later SLW; smoothed lip surface treatment became more common than obliterated ones; and dowel impressions may have become more popular as an interior decoration application rather than cord wrapped object impressions. These changes were based on a seriation of the proposed earliest site in her sample and Midden A and Midden B of the Creech site, which Peterson (1986:173) suggested was the oldest. Although several of these interpretations were based on very limited statistical differences, it was decided to see if

these attributes were present in the samples of this thesis. Ridged interior neck forms (e.g. Redsky), cut notched lips (e.g. Wanipigow), smoothed lip surfaces (e.g. Lowton), and dowel impressions (e.g. Lowton) are found in the sites discussed in Chapter Five. However, as most of the sites in Manitoba represent small collections and many were surface collected, lacking <sup>14</sup>C dates, it is not possible to draw definite conclusions.

Peterson (1986:177) concluded that there was no significant variation between Lake-Forest and Plains SLW samples in Minnesota. Sandy Lake ware occurs as a thin veneer across the Boundary Waters region of northwestern Ontario, apparently in Late Precontact or early Postcontact contexts as suggested by Arthurs (1986). He (Arthurs 1986:263) believed that the SLW found in the Rainy River region, specifically at the Long Sault site, did not appear to have local roots as evident from stylistic and technological evidence. Rather, he (Arthurs 1986:263) suggested that the roots were probably to the south in central Minnesota. Judging by the limited <sup>14</sup>C dating from SLW sites, this idea would appear to be appropriate since the earliest sites are from eastern North Dakota and western Minnesota (Table 5.13).

Another problem encountered during this research was whether to refer to SLW found in Manitoba sites as belonging to the *Psinomani* culture (Gibbon 1994:146). The original description of this culture is not particularly apt for sites in Manitoba; however, the SLW found in Manitoba sites may represent incursions of wild rice harvesting groups. Thus, sites within Manitoba can probably be affiliated with the *Psinomani* culture. Many researchers have used this term, including Arthurs (1978) for describing Canadian materials, and it is appropriate for the implied duration of this ware. More discussion of this topic is found in Section 3.3.

The importance of wild rice (*Zizania palustris* or *aquatica*) to the *Psinomani* culture cannot be overemphasized (as discussed further in Section 3.5.1). Arthurs (1986:263) suggested that conditions became cooler at about A.D. 1100 in Minnesota, which may have enhanced the growth of wild rice stands. This date has implications for

Selkirk and SLW, which were just beginning to appear. Arthurs (1986:263) discussed the possibility of Selkirk peoples exploiting this plant by making incursions to Minnesota. However, Ray (1974:35) noted that the Jesuit Relation of 1669-1670 recorded that the Cree and Assiniboine were allies at that time, and that they were making seasonal incursions into central Minnesota (discussed further in this chapter). This notion implies that they had some kind of relationship with the people living there, or even an ancestral claim, given that areas of wild rice were often 'owned', at least later in time (Vennum 1988). This plant may have been introduced into central southern Manitoba by people(s) who had originally migrated there.

**6.2.3 Research Objective #3.** The northwestern extent of SLW was the third problem addressed in this project. Just as Arthurs (1978) noted about SLW in northwestern Ontario, this research has indicated low amounts of this ware scattered across southern and central Manitoba. The exception to this idea is the Lowton site, where substantial numbers of SLW have been identified (see Section 5.4.3). This finding is significant since it probably indicates that the people(s) who manufactured this pottery had numerous interactions with other groups.

To determine the northwestern extent of SLW, numerous collections were examined from several repositories (Table 1.2). During the course of this research, a number of sites which had been suggested to have SLW were investigated as well as some examples located by the author. Chapter Five documents the results of this search for SLW, detailing the sites and vessels. As a result of this new information, along with compiling previous sources of SLW distribution (e.g. Arthurs 1978; Lofstrom 1988; Participants 1987), a revised distribution for this ware was formulated (Figure 5.6). Although some authors (Dyck and Morlan 1995; Malainey 1995b; Walde 1994) had suggested the possible presence of SLW in Saskatchewan, the author did not feel that the studied examples from southeast and south central were close enough in attributes to support this idea. Many attributes such as general profile shape, some surface finishes,



grit temper, and decoration are similar, but most were more appropriately identified as Mortlach, Wascana, or Old Women's phase pottery.

This thesis also synthesized the occurrences of shell tempered pottery in central Canada (Figure 2.11), which likely has implications for the distribution of SLW. This ware, with shell temper, occurs in sites that are geographically closest to the study area. Many of the attributes of these shell tempered sherds found in Canada overlapped with SLW, so there are indeed a few examples of this ware with shell tempering farther north than previously documented.

### **6.3 Conclusions**

Sandy Lake ware is found in parts of Wisconsin, Minnesota, North Dakota, Ontario, Manitoba, and there is limited evidence that it may have extended into eastern Saskatchewan. This ware is considered to be part of the *Psinomani* archaeological culture (Gibbon 1994) and part of the postcontact Bradbury phase in Minnesota, which also has Oneota pottery and Postcontact goods. Dates of components with SLW range from about A.D. 1000 to 1750, as previously suggested by Birk (1979).

The research presented here provides a comprehensive summary of SLW and the *Psinomani* culture. It also presents a revised distribution of the northwestern extent and first compilation of sites with shell tempered pottery in south central Canada. Two new types, Sandy Lake Textile Impressed and Sandy Lake Obliterated, are proposed by the author. The latter is prevalent in northwestern Ontario and present in southern Manitoba and eastern North Dakota. These new terms allow appropriate description of the ware in all areas where it is found.

### **6.4 Recommendations for Future Research**

After completing this project, a number of recommendations can be made for future research in related topics. For example, similar studies to determine the eastern extent of this ware would be of interest. There are likely more sites with SLW in eastern Minnesota and Wisconsin. Similarly, as Anfinson (1997) indicated, there may be SLW

in the far northwest portion of South Dakota. Although radiocarbon dating is a somewhat costly process, obtaining more data to further evaluate the temporal differences between Sandy Lake components would be beneficial. Additional mineralogical assessments, such as those of Burns (1994) and Hanna (1984), would be helpful in determining if this ware was made from locally derived materials or not. It would be particularly interesting to find out if 'Ash Rapids Corded', Duck Bay ware, and SLW vessels have similar mineralogy. An investigation into the unusual, deep orange colour found on some sherds in southeastern Manitoba (e.g. Falcon Lake, Hamilton, and Redsky sites) would be intriguing. This may have involved a firing technique, the addition of some material, or an unusual clay source. A final avenue of research would be to analyze one or more aspects of the Wanipigow site area. The extensive collection of pottery vessels may allow for the identification of individual potters or possibly any number of cultural preferences. While several researchers have worked on projects dealing with the Wanipigow site area (e.g. B. Saylor 1989; Saylor 1989, etc.), there are others that could be pursued.

## REFERENCES CITED

- Ahler, Stanley A., Thomas D. Thiessen, and Michael K. Trimble**  
1991 *People of the Willows: The Prehistory and Early History of the Hidatsa Indians*. University of North Dakota Press, Grand Forks.
- Aiken, S.G., P.F. Lee, D. Punter, and J.M. Stewart**  
1988 *Wild Rice in Canada*. Agriculture Canada Publication 1830, NC Press Limited, Toronto, Ontario.
- Anfinson, Scott F.**  
1979b Orr Phase. In *A Handbook of Minnesota Prehistoric Ceramics*, edited by Scott F. Anfinson, pp. 157-162. Occasional Publications in Minnesota Anthropology No. 5. Minnesota Archaeological Society, Fort Snelling.  
1997 *Southwestern Minnesota Archaeology: 12,000 Years in the Prairie Lake Region*. Minnesota Prehistoric Archaeology Series No. 14, Minnesota Historical Society, St. Paul.
- Anfinson, Scott F. (editor and compiler)**  
1979a *A Handbook of Minnesota Prehistoric Ceramics*. Occasional Publications in Minnesota Anthropology No. 5. Minnesota Archaeological Society, Fort Snelling.
- Arthurs, David**  
1978 Sandy Lake Ware in Northwestern Ontario: A Distributional Study. *Archaeofacts: Journal of the Archaeological Society of South-western Manitoba* 5(2,3):57-64. Also in *Manitoba Archaeological Quarterly* 2(1-2):57-64.  
1979 The Development of Prehistoric Ceramic Technology in Ontario. *Ontario Potter* 4(1):30-32.  
1986 *Archaeological Investigations at the Long Sault Site (Manitou Mounds): A Stratified Habitation and Burial Station on the Rainy River in Northwestern Ontario*. Northwestern Region Conservation Archaeology Report No. 7, Ontario Ministry of Citizenship and Culture, Toronto.
- Batura, James M.**  
1981 Demographic Models and the Minnesota Woodland Period. In *Various Papers Presented at the Conference on Current Topics in Northern Plains, Midwest Archaeology*, edited by Richard A. Fox, pp. 16-23. University of North Dakota Anthropological Papers No. 3, Contribution No. 142, Grand Forks.
- Benn, David W.**  
1989 Hawks, Serpents and Bird-Men: Emergence of the Oneota Mode of Production. *Plains Anthropologist* 34:233-260.
- Birk, Douglas A.**  
1977a The Norway Lake Site: A Multicomponent Woodland Complex North Central Minnesota. *Minnesota Archaeologist* 36(1):16-45.  
1977b Two Sandy Lake Ware Vessels from Onigum Point, Cass County, Minnesota. *Minnesota Archaeologist* 36(1):9-15.

1979 Sandy Lake Ware. In *A Handbook of Minnesota Prehistoric Ceramics*, edited by Scott F. Anfinson, pp. 175-182. Occasional Publications in Minnesota Anthropology No. 5, Minnesota Archaeological Society, Fort Snelling.

1992 Putting Minnesota on the Map: Early French Presence in the *Folle Avoine* Region Southwest of Lake Superior. *The Minnesota Archaeologist* 51:7-26, Omnibus Edition, Volumes 51-54 (1992-1995), issued in 1997.

**Birk, Douglas A. and Elden Johnson**

1992 The Mdewakanton Dakota and Initial French Contact. In *Calumet and Fleur-de-Lys: Archaeology of Indian and French Contact in the Midcontinent*, edited by John A. Walthall and Thomas E. Emerson, pp. 203-240. Smithsonian Institution Press, Washington and London.

**Bleed, Peter**

1969 *The Archaeology of Petaga Point: The Preceramic Component*. Minnesota Prehistoric Archaeology Series No. 2. Minnesota Historical Society, St. Paul.

**Boggs, Jr., Sam**

1987 *Principles of Sedimentology and Stratigraphy*. MacMillan Publishing Company, New York.

**Brandzin, Vera**

1994 *Provenance Studies at the Lovstrom Site (DjLx-1): Clay and Ceramic Analysis*. Unpublished B.A. Specialist thesis, Department of Sociology and Anthropology, Brandon University, Manitoba.

**Breakey, Kim C.**

1981 Description of Some Ceramics from the Middle Red River Valley, Minnesota-North Dakota. *The Minnesota Archaeologist* 40(1):33-41.

**Buchner, Anthony P.**

1979 *The 1978 Caribou Lake Project, Including a Summary of the Prehistory of East-Central Manitoba*. Final Report No. 8, Papers in Manitoba Archaeology. Department of Cultural Affairs and Historical Resources, Winnipeg.

1988 The Geochronology of the Lockport Site. *Manitoba Archaeological Quarterly* 12(2):27-31.

**Buchner, Anthony P., and R.T. Callaghan (Richard)**

1980 The Astwood Site. In *Studies in Eastern Manitoba Archaeology*, pp. 71-108. Miscellaneous Papers No. 10, Papers in Manitoba Archaeology. Department of Cultural Affairs and Historical Resources, Winnipeg.

**Budak, Michael K.**

1985 Laurel Ceramics: A Pointed Question. *The Minnesota Archaeologist* 44(2):31-40.

1991 The Function of Shell Temper in Pottery. *The Minnesota Archaeologist* 50(2): 53-59.

**Burns, Tammy Elizabeth**

1994 *An Inquiry into the Mineralogy of the Ceramics from the Bird River Area*. Unpublished paper completed for a reading course with Dr. Leigh Syms, University of Manitoba, Winnipeg. 214 pages.

**Burpee, Lawrence J. (editor)**

1908 *An Adventurer from Hudson Bay: Being the Journal of a Journey Performed by Matthew Cocking, 1772-1773*. Proceedings and Transactions of the Royal Society of Canada, Third Series 2(2):91-121.

1968 *Journals and Letters of Pierre Gaultier de Varennes de La Vérendrye and His Sons*. Reprinted. Greenwood Press, New York. Originally published 1927, Champlain Society Publication XVI, The Champlain Society, Toronto, Ontario..

**Butler, William B., and J.J. Hoffman**

1992 A Checklist of Plains Ceramic Types and Wares. *South Dakota Archaeology* 15:1-106.

**Byrne, William J.**

1973 *The Archaeology and Prehistory of Southern Alberta as Reflected by Ceramics*. 3 vols. Archaeological Survey of Canada, Mercury Series, Paper No. 14. National Museum of Man, Ottawa.

**Caine, Christy A.H.**

1974 The Archaeology of the Snake River Region in Minnesota. In *Aspects of Upper Great Lakes Anthropology: Papers in Honor of Lloyd A. Wilford*, edited by Elden Johnson, pp. 55-63. Minnesota Prehistoric Archaeology Series No. 11, Minnesota Historical Society, St. Paul.

**Calabrese, F.A.**

1977 Ceramic Classification in Middle Missouri Prehistory. In *Trends in Middle Missouri Prehistory: A Festschrift Honouring the Contributions of Donald J. Lehmer*, edited by W.R. Wood, pp. 28-37. Plains Anthropologist Memoir 13.

**Callaghan, B.**

1979 A Study of the Ceramics from the Gordon Randall Collection in Killarney Region of South-Central Manitoba. *Archae-Facts: Journal of the Archaeological Society of South-western Manitoba* 6(3-4):4-44.

**Callaghan, R.T. (Richard T.)**

1982 Test Excavations at the Lady Rapids Site (DcKc-1): A Multi-component Site in the Boundary Waters Area of Northwestern Ontario. In *Two Conservation Sites: The Lady Rapids and Fisk Sites*, edited by C.S. "Paddy" Reid, pp. 1-63. Archaeology Research Report 18, Archaeology and Heritage Planning Branch, Ontario Ministry of Citizenship and Culture, Toronto.

**Capes, Katherine H.**

1963 *The W.B. Nickerson Survey and Excavations, 1912-15, of the Southern Manitoba Mounds Region*. Anthropology Papers Number 4, National Museum of Canada, Dept. of Northern Affairs and National Resources, Ottawa.

**Carmichael, Patrick H.**

1977 *A Descriptive Summary of Blackduck Ceramics from the Wanipigow Lake Site Area (EgKx-1), 1975 and 1976*. Miscellaneous Papers No. 5, Papers in Manitoba

Archaeology. Historic Resources Branch, Department of Tourism, Recreation and Cultural Affairs, Winnipeg.

1979 *The Thunderbird Site, EgKx-15: A Prehistoric Petroform and Habitation Site in Manitoba*. Final Report No. 6, Papers in Manitoba Archaeology. Historic Resources Branch, Department of Tourism and Cultural Affairs, Winnipeg.

1981 Blackduck Social Organization: A New Hypothesis. In *Various Papers Presented at the Conference on Current Topics in Northern Plains, Midwest Archaeology*, edited by Richard A. Fox, pp. 24-45. University of North Dakota Anthropological Papers No. 3, Contribution No. 142, Grand Forks.

**Chapman, Allen R.**

1989 Appendix B: Northern Wild Rice. *Manitoba Archaeological Quarterly* 13(1-4):131-136.

**Cooper, Leland R., and Elden Johnson**

1964 Sandy Lake Ware and its Distribution. *American Antiquity* 29(4):474-479.

**Dahlberg, James**

1977 Ceramic Analysis. In *Archaeological Investigations of the Hendrickson III Site-32SN403: LaMoure-Oakes Project Area, Garrison Diversion Unit, North Dakota*. pp. 149-206. Final Report for Period September 1976 - July 1977. Submitted to U.S. Department of Interior, Bureau of Reclamation, Billings, Montana. Department of Anthropology and Archaeology, University of North Dakota, Grand Forks.

**Davis, Leslie B. (editor)**

1988 *Avonlea Today and Yesterday: Archaeology and Prehistory*. Compiled after a 1984 Plains Conference Symposium in Lincoln, Nebraska. Saskatchewan Archaeological Society, Saskatoon.

**Dawson, Ken C. A.**

1987 The Martin-Bird Site. *Ontario Archaeology* 47:33-57.

**Deck, D.M., and C.T. Shay**

1992 Preliminary Report on Plant Remains from the Lockport Site (EaLf-1). *Manitoba Archaeological Journal* 2(2):36-49.

**Deer, W.A., R.A. Howie, and J. Zussman**

1989 *An Introduction of the Rock-Forming Minerals*. Reprinted. Longman Scientific & Technical, Essex, England. Originally published 1966, Longman Scientific & Technical, Essex, England.

**Densmore, Frances**

1970 *Chippewa Customs*. Reprinted. Johnson Reprint Company, Ltd., New York. Originally published 1929. Smithsonian Institution, Bureau of American Ethnology, Bulletin 86. United States Government Printing Office, Washington.

**Dickson, Gary A.**

1980 *The Kame Hills Site*. Final Report No. 9, Papers in Manitoba Archaeology. Historic Resources Branch, Department of Cultural Affairs and Historical Resources, Winnipeg.

**Dobson, Michael, and Chris Whaley**

1997 *Salvage or Site? An Overview of Recent Excavations at Lockport West (EaLf-2)*. *Manitoba Archaeological Journal* 7(2):7-17.

**Dore, William G.**

1969 *Wild-Rice*. Publication 1393, Canada Department of Agriculture, Queen's Printer, Ottawa.

**Dudley, C.R.**

n.d. *The Snyder Site*. Ms. on file, Archaeology Laboratory, Brandon University, Brandon, Manitoba.

**Dyck, Ian**

1983 *The Prehistory of Southern Saskatchewan*. In *Tracking Ancient Hunters: Prehistoric Archaeology in Saskatchewan*, edited by Henry T. Epp and Ian Dyck, pp. 66-139. Saskatchewan Archaeological Society, Regina. Modern Press, Saskatoon.

**Dyck, Ian, and Richard E. Morlan**

1995 *The Sjovold Site: A River Crossing Campsite in the Northern Plains*. Archaeological Survey of Canada, Mercury Series, Paper No. 151. Canadian Museum of Civilization, Hull.

**Dyer, Elizabeth**

1923 *Textile Fabrics*. The Riverside Press, Cambridge, Massachusetts.

**Ebell, S. Biron**

1988 *The Red and Assiniboine Rivers in Southern Manitoba: A Late Prehistoric and Early Historic Buffer Zone?* *Manitoba Archaeological Quarterly* 12(2):3-26.

**Ens, Denise A.**

1998a *Diachronic Palaeodietary Analysis of Prairie Fringe Peoples of Southeastern Manitoba*. Unpublished Masters thesis, Department of Anthropology, University of Manitoba, Winnipeg.

1998b *Dietary Deficiencies and Osteological Palaeo-Pathologies on Human Remains of Southeastern Manitoba*. In *Proceedings and Abstracts of the 8th Annual APALA Student Conference: January 23-25, 1998, University of Saskatchewan, Saskatoon*, edited by Laurie L. Carson, Nathan Friesen, Jill Taylor-Hollings, and Sandra Pentney, pp. 8-13. Apex Graphics Ltd., Saskatoon.

**Evans, G. Edward**

1961 *Ceramic Analysis of the Blackduck Ware and Its General Cultural Relationships*. *Proceedings of the Minnesota Academy of Science* 29:33-54.

**Flynn, Catherine**

1993 *The Horticultural Component at the Lockport Site (EaLf-1): An Overview of Ceramic and Cultural Affiliations*. Paper presented at the 51st Annual Meeting of the Plains Anthropological Society, Saskatoon, Saskatchewan.

**Flynn, Catherine M., and A. Zoe Kogan**

1991 A Compositional Analysis of the Late Prehistoric Ceramics from the Lockport Site (EaLf-1), Manitoba. *MASA, Journal of the Manitoba Anthropology Students' Association* 11(1):36-73.

**Ford, Richard I., and David S. Brose**

1975 Prehistoric Wild Rice from Dunn Farm Site, Leelanau County, Michigan. *The Wisconsin Archaeologist* 56(1):9-15.

**Fread, Ed**

1996 *A Report on the Falcon Lake Excavation*. Paper on file at the Manitoba Museum of Man and Nature, Winnipeg.

**George, Douglas**

1979 Clam River Focus. In *A Handbook of Minnesota Prehistoric Ceramics*, edited by Scott Anfinson, pp. 67-72. Occasional Publications in Minnesota Anthropology No. 5, Minnesota Archaeological Society, Fort Snelling.

**Gibbon, Guy E.**

1976 The Old Shakopee Bridge Site: A Late Woodland Ricing Site on Shakopee Lake Mille Lacs County, Minnesota. *The Minnesota Archaeologist* 35(2):2-56.

1986 Chapter 6 The Mississippian Tradition: Oneota Culture. *The Wisconsin Archaeologist* 67(3&4):314-338.

1987 Battle Island (21AK9): A Multi-component Site on Big Sandy Lake, Aitkin County, Minnesota. *The Minnesota Archaeologist* 46(1):3-30.

1993 The Middle Missouri Tradition in Minnesota: A Review. In *Prehistory and Human Ecology of the Western Prairies and Northern Plains*, edited by Joseph A. Tiffany, pp. 169-187. Plains Anthropologist Memoir 27, Volume 38(145).

1994 Cultures of the Upper Mississippi River Valley and Adjacent Prairies in Iowa and Minnesota. In *Plains Indians, A.D. 500-1500: The Archaeological Past of Historic Groups*, edited by Karl H. Schlesier, pp. 128-148. University of Oklahoma Press, Norman.

1995 Oneota at the Periphery: Trade, Political Power, and Ethnicity in Northern Minnesota and on the Northeastern Plains in the Late Prehistoric Period. In *Oneota Archaeology: Past, Present, and Future*, edited by William Green, pp. 175-199. Report 20, Office of the State Archaeologist, The University of Iowa, Iowa City.

1998 Sandy Lake. In *Archaeology of Prehistoric Native America: An Encyclopedia*, Principal Editor Guy Gibbon, pp. 746-747. Garland Publishing, Inc., New York.

**Gibbon, Guy E. and Christy A.H. Caine**

1980 The Middle to Late Woodland Transition in Eastern Minnesota. *Mid-Continental Journal of Archaeology* 5(1):57-72.

**Gibson, Terrence H.**

1976 *The Winnipegosis Site*. Preliminary Report #2, Papers in Manitoba Archaeology. Department of Tourism, Recreation, & Cultural Affairs, Historic Resources Branch, Winnipeg.



1998 *Site Structure and Ceramic Behaviour of a Protohistoric Cree Aggregation Campsite*. Unpublished Ph.D. dissertation. Department of Anthropology, University of Alberta, Edmonton.

**Goltz, Grant**

1991 *Woodland Ceramics (Cord-Wrapped Paddles and other Archaeological Myths)*. Paper presented at the Council for Minnesota Archaeology Spring Symposium, St. Paul. Draft manuscript in possession of the author.

**Good, Kent, James Dahlberg, Thomas Larsen, Bruce Benz, and Fred Schneider**

1977 *Archaeological Investigations of the Hendrickson III Site - 32SN403: LaMoure-Oakes Project Area, Garrison Diversion Unit, North Dakota*. Final Report for Period September 1976 - July 1977. Submitted to U.S. Department of Interior, Bureau of Reclamation, Billings, Montana. Department of Anthropology and Archaeology, University of North Dakota, Grand Forks.

**Grainger, Dana-Mae**

1980 *Faunal Assemblage from Wanipigow Lake Site (EgKx-1), Manitoba*. Manuscript on file with Historic Resources Branch, Winnipeg.

**Gratz, Kathleen E.**

1977 Making Hopi Pottery: Techniques and Materials. *Plateau Magazine of the Museum of Northern Arizona* 49(3):14-17.

**Gregg, Michael L.**

1994 Archaeological Complexes of the Northeastern Plains and Prairie-Woodland Border, A.D. 500-1500. In *Plains Indians, A.D. 500-1500: The Archaeological Past of Historic Groups*, edited by Karl H. Schlesier, pp. 71-95. University of Oklahoma Press, Norman.

**Gregg, Michael L. (compiler)**

1985 *An Overview of the Prehistory of Western and Central North Dakota*. Edited by Michael L. Gregg and Dale Davidson. Cultural Resource Series No. 1. Bureau of Land Management, Billings, Montana.

**Gregg, Michael L. (editor)**

1987 *Archaeological Excavation at the Naze Site (32SN246)*. Report prepared for U.S. Department of the Interior, Bureau of Reclamation, Billings, Montana. Department of Anthropology, University of North Dakota, Grand Forks, ND. Contract 4-CS-60-00630, Work Order No. 5. Contract 0-CS-60-03800, Task Order No. 10.

1994 *Horner-Kane Site (32RY77) Archaeological Excavations, Grahams Island State Park, Ramsey County, North Dakota, 1991 Field Season*. Contribution No. 285, Submitted to U.S. Bureau of Reclamation, Missouri-Souris Projects Office, Bismarck, North Dakota. Department of Anthropology, Hariman Research Center, University of North Dakota, Grand Forks, ND.

**Gregg, Michael L., Cynthia Kordecki, and Paul R. Picha**

1985 *Archaeological Investigations in the Southern Section of the Garrison Diversion Unit in North Dakota, 1984*. Department of Anthropology, University of North Dakota, Contribution 219. Report submitted to U.S. Department of the

Interior, Bureau of Reclamation, Upper Missouri Region, Billings, Montana.  
Contract 4-CS-60-00630, Work Order No. 1.

**Gregg, Michael L., and Thomas F. McCauley**

1994 Prehistoric Ceramics. In *Horner-Kane Site (32RY77) Archaeological Excavations, Grahams Island State Park, Ramsey County, North Dakota, 1991 Field Season*, edited by Michael L. Gregg, pp. 6.1-6.26. Contribution No. 285, Submitted to U.S. Bureau of Reclamation, Missouri-Souris Projects Office, Bismarck, North Dakota. Department of Anthropology, Hariman Research Center, University of North Dakota, Grand Forks, ND.

**Gregg, Michael L., Paul R. Picha, Cynthia Kordecki, Fern E. Swenson, and Chèrie E. Hauray**

1986 *Test Excavations at Eight Archaeological Sites on the James River in Stutsman and LaMoure Counties, North Dakota*. Department of Anthropology, University of North Dakota, Grand Forks, Contribution 232. Report submitted to U. S. Department of the Interior, Bureau of Reclamation, Upper Missouri Region, Billings, Montana. Contract 4-CS-60-00630, Work Order No.3.

**Griffin, James B. (editor)**

1952 *Archaeology of Eastern United States*. University of Chicago Press, Chicago.

**Halverson, Colleen**

1992 *Turtles and Tourists: Excavations at the Nestor Falls Site (DgKl-3)*. Ontario Ministry of Culture and Communications, Field Services Branch, Northern Region, Conservation Archaeology Report #16, Kenora.

**Hambly, S. Leigh**

1994 The Derivation of Cultural Information from a Preliminary Analysis of Projectile Points from Wanipigow Lake Site EgKx-1. *Manitoba Archaeological Journal* 4(1&1):1-33.

**Hamilton, Scott**

1981 *The Archaeology of the Wenasaga Rapids*. Archaeology Research Report 17, Archaeology and Heritage Planning Branch, Ontario Ministry of Culture and Recreation, Toronto.

1988 The Concept of Cultural Edge in the Boreal Forest of Manitoba and North Western Ontario. In *Boreal Forest and Sub-Arctic Archaeology*, edited by C.S. "Paddy" Reid, pp. 37-71. Occasional Publications of the London Chapter No. 6, Ontario Archaeological Society Inc., London, Ontario.

**Handsman, Russell G., and Mark P. Leone**

1989 Living History and Critical Archaeology in the Reconstruction of the Past. In *Critical Traditions in Contemporary Archaeology*, edited by Alison Wylie and Valerie Pinsky, pp. 117-135. Cambridge University Press, Cambridge, Massachusetts.

**Hanna, Margaret G.**

1976 *The Moose Bay Burial Mound EdMq-1*. Series editor Ian G. Dyck, Anthropological Series No. 3, Saskatchewan Museum of Natural History. Saskatchewan Department of Tourism and Renewable Resources, Regina.

- 1982 *Pots and Populations: Alternative Techniques for Using Ceramics as Indicators of Social Units*. Unpublished Ph.D. dissertation, Department of Archaeology, University of Calgary, Calgary, Alberta.
- 1983 The Pot That Shattered: Processes Responsible for Breakage of a Vessel Recovered from Bushfield West (FhNa-10). *Saskatchewan Archaeology* (4):31-40.
- 1984 Do You Take This Woman? Economics and Marriage in a Late Prehistoric Band. *Plains Anthropologist* 29:115-129.
- 1992 Duck Bay Complex Ceramics: Tracking Domestic and Foreign Cultural Affairs of the Aschikibokahn Population (FbMB-1). *Manitoba Archaeological Journal* 2(1):14-30.

**Hartlen, George**

- 1996a *An Analysis of the Pottery Belonging to the Gordon Randall Collection: A Prehistoric Plains/Parkland Assemblage*. Unpublished B.A. Specialist thesis, Department of Sociology and Anthropology, Brandon University, Brandon, Manitoba.
- 1996b A Preliminary Analysis of the Pottery From the Gordon Randall Collection. In *Proceedings and Abstracts: 6th Annual APALA Student Conference: January 12-14, 1996*, edited by Bruce D. Low and Rob Wondrasek, pp. 28-32. University of Saskatchewan, Saskatoon.
- 1997 An Analysis of the Pottery Belonging to the Gordon Randall Collection: A Precontact Plains/Parkland Assemblage. *Manitoba Archaeological Journal* 7(1):44-115.

**Haury, Cherie E.**

- 1994 Vertebrate Faunal Remains. In *Horner-Kane Site (32RY77) Archaeological Excavations, Grahams Island State Park, Ramsey County, North Dakota, 1991 Field Season*, edited by Michael L. Gregg, pp. 10.1-10.36. Contribution No. 285, Submitted to U.S. Bureau of Reclamation, Missouri-Souris Projects Office, Bismarck, North Dakota. Department of Anthropology, Hariman Research Center, University of North Dakota, Grand Forks, ND.

**Hickerson, Harold**

- 1970 *The Chippewa and Their Neighbors: A Study in Ethnohistory*. Studies in Anthropological Method, general editors George and Louise Spindler. Holt, Rinehart and Winston, Inc., New York.

**Hill, C. Gordon**

- 1991 *Archaeological Site Inventory Form for DjKt-2 (Redsky) site*. Manitoba Culture, Heritage and Recreation, Historic Resources, Winnipeg, Manitoba. Includes site update form for 1993 visit.
- 1992 *Summary of Investigations at the River Mouth Site (EcKx-37) on Lee River, Manitoba*. Ms. on file, Historic Resources Branch, Manitoba Culture, Heritage, and Citizenship, Winnipeg.

**Hind, Henry Y.**

- 1971 *Narrative of the Canadian Red River Exploring Expedition of 1857 and of the Assiniboine and Saskatchewan Expedition of 1858*. Reprinted. M.G. Hurtig Limited, Edmonton, Alberta. Originally published 1860.
- Hlady, Walter M.**  
1971 An Introduction to the Archaeology of the Woodland Area of Northern Manitoba. *Manitoba Archaeological Newsletter* VIII(2&3):i-66.
- Hohman-Caine, Christy A., and Grant E. Goltz**  
1995 Brainerd Ware and the Early Woodland Dilemma. *The Minnesota Archaeologist* 54:109-129, Omnibus Edition, Volumes 51-54 (1992-1995), issued in 1997.  
  
1998 *Hannaford Ware: A Transitional Middle Woodland to Late Woodland Ceramic Ware in Northern Minnesota*. Preliminary draft manuscript in the possession of the author (distributed at the Lake Superior Basin Workshop).
- Howard, James H.**  
1977 *The Plains-Ojibwa or Bungi: Hunters and Warriors of the Northern Plains with Special Reference to the Turtle Mountain Band*. Reprinted. Anthropology Vol. 7, J & L Reprint Company, Lincoln, Nebraska. Originally published 1965, Anthropological Papers No. 1, South Dakota Museum, University of South Dakota, Vermillion.
- Hudak, G. Joseph**  
1976 *Woodland Ceramics from the Pedersen Site*. Scientific Publications of the Science Museum of Minnesota, N.S., Vol. 3, No. 2. The Museum, St. Paul.
- Hurley, William M.**  
1975 *An Analysis of Effigy Mound Complexes in Wisconsin*. Anthropological Papers 59, Museum of Anthropology, University of Michigan, Ann Arbor.  
  
1979 *Prehistoric Cordage: Identification of Impressions on Pottery*. Aldine Manuals of Archaeology 3, Taraxacum Inc., Chicago.
- Jackson, Kenneth**  
1998 Problems and Possibilities: The Use of Archaeological Remains in a Rural Museum. In *Proceedings and Abstracts of the 8th Annual APALA Student Conference, January 23rd-25th, 1998, University of Saskatchewan, Saskatoon*, edited by Laurie L. Carson, Nathan Friesen, Jill Taylor-Hollings, and Sandra Pentney, pp. 206-215. Apex Graphics, Saskatoon.
- Johnas, Volker**  
1988 A Description of Johnas Site Rim Sherds. *Manitoba Archaeological Quarterly* 12(2):33-48.
- Johnson, Craig M. (Principal Investigator)**  
1995 *Phase II Archaeological Investigations at the Mooney Site (21NR29), Norman County, Minnesota*. With contributions Michael Michlovic, Stacey Buck, and Rebecca St. George. Report prepared for the Minnesota Department of Transportation. Minneapolis, Minnesota.
- Johnson, Elden**

- 1969a Preliminary Notes on the Prehistoric Use of Wild Rice. *The Minnesota Archaeologist* 30(2):31-43.
- 1969b Archaeological Evidence for the Utilization of Wild Rice. *Science* 163:267-277.
- 1978 *The Prehistoric Peoples of Minnesota*. 2nd ed. Minnesota Prehistoric Archaeology Series No. 3, Minnesota Historical Society, St. Paul.
- 1985 The 17th Century Mdewakanton Dakota Subsistence Mode In *Archaeology, Ecology and Ethnohistory of the Prairie-Forest Border Zone of Minnesota and Manitoba*, edited by Janet Spector and Elden Johnson, pp. 154-166. Reprints in *Anthropology*, Vol. 31, J & L Reprint Company, Lincoln, Nebraska.

**Johnson, Elden, Christina Harrison, and Jeanne Schaaf**

- 1977 *Cultural Resources Inventory of Lands Adjacent to Lake Winnibigoshish*. Draft copy. Submitted to U.S. Army Corps of Engineers, St. Paul District. University of Minnesota, Minneapolis. Contract DACW 37-76-C-0181.

**Johnson, Elden, and Tim Ready**

- 1992 Ceramic Funerary Masks from McKinstry Mound 2. *Midcontinental Journal of Archaeology* 17(1):16-45.

**Joyes, Dennis**

- 1969 *The Avery Site at Rock Lake: A Prehistoric Campsite in Southwestern Manitoba*. Unpublished Master's thesis, Department of Anthropology, University of Manitoba, Winnipeg.
- 1973 The Shippee Canyon Site. *Archaeology in Montana* 14(2):49-85.

**Justin, Michael A., and Lynn Schuster**

- 1994 The Basswood Shores Site, 21DL90: A Late Woodland Habitation. *The Minnesota Archaeologist* 53:77-84.

**Keane, Kahlee**

- 1997 *Wild Rice: Zizania L. spp.* Root Woman and Dave, Alvena, Saskatchewan. ISBN 0-9699505-1-9.

**Kehoe, Alice B.**

- 1959 Ceramic Affiliations in the Northwestern Plains. *American Antiquity* 25(2):237-246.
- 1990 The Monumental Midwestern Taxonomic Method. In *The Woodland Tradition in the Western Great Lakes: Papers Presented to Elden Johnson*, edited by Guy E. Gibbon, pp. 31-36. Publications in Anthropology Number 4, University of Minnesota, Minneapolis.

**Kehoe, Thomas F.**

- 1966 The Small Side-Notched Point System of the Northern Plains. *American Antiquity* 31(6):827-841.

**Koezur, Polly, and James V. Wright**

1976 *The Potato Island Site, District of Kenora, Ontario*. Archaeological Survey of Canada, Mercury Series, Paper No. 51. National Museum of Man, Ottawa.

**Kolb, Jennifer L.**

1988 The Fickle Site. In *The Archaeological Resources of Northwestern Wisconsin: Region 1 Archaeology Program 1987-1988*, with contributions by Michael L. Kolb and Edgar S. Oerichbauer, pp. 59-113. Submitted to Historic Preservation Division, State Historic Society of Wisconsin, The Burnett County Historical Society, Siren, Wisconsin.

**Kordecki, Cynthia, Dennis L. Toom, and Michael A. Jackson**

1993 *Jamestown Reservoir Project Area Cultural Resources Inventory, Stutsman County, North Dakota, 1992 Field Season*. University of North Dakota, Department of Anthropology, Hariman Research Center, Grand Forks, Contribution 283. Final report submitted to U.S. Bureau of Reclamation, Missouri-Souris Region, Bismarck, North Dakota. Contract No. 0-CS-60-03800, Task Order No. 15.

**Kroeber, Alfred L.**

1916 *Zuñi Potsherds*. Anthropological Papers of the American Museum of Natural History, Volume 18, part 1, pp. 7-37, New York.

**Kuttruff, Jenna T.**

1980 Prehistoric Textiles Revealed by Potsherds. *Shuttle, Spindle, and Dyepot* 11(3):40-41, 80.

**Lass, Barbara**

1980 Radiocarbon Dates from Minnesota Archaeological Sites to 1979. *The Minnesota Archaeologist* 39:29-39.

**Lehmer, Donald J.**

1954 *Archeological Investigations in the Oahe Dam area, South Dakota, 1950-51*. River Basin Surveys Papers No. 7, Smithsonian Institution, Bureau of American Ethnology, Bulletin 158. United States Government Printing Office, Washington, D.C.

1971 *Introduction to Middle Missouri Archaeology*. Anthropological Papers 1, National Park Service, Department of the Interior, Washington, D.C.

**Lelond, Lynn**

1988 A Descriptive Analysis of a Collection of Body Sherds from the Johnas Site Near Oak Lake. *Manitoba Archaeological Quarterly* 12(2):49-74.

**Lenius, Brian J., and Dave M. Olinyk**

1990 The Rainy River Composite: Revisions to Late Woodland Taxonomy. In *The Woodland Tradition in the Western Great Lakes: Papers Presented to Elden Johnson*, edited by Guy E. Gibbon, pp. 77-112. Publications in Anthropology No. 4, University of Minnesota, Minneapolis.

**Little, Bryce**

1985 Early Mdewakanton Dakota Culture and Interpretations for Archaeology: A Re-evaluation, 1640-1780. In *Archaeology, Ecology and Ethnohistory of the Prairie-Forest Border Zone of Minnesota and Manitoba*, edited by Janet Spector and

Elden Johnson, pp. 146-153. Reprints in Anthropology, Vol. 31, J & L Reprint Company, Lincoln, Nebraska.

**Lofstrom, Ted**

1987 The Rise of Wild Rice Exploitation and Its Implications for Population Size and Social Organization in Minnesota Woodland Period Cultures. *The Minnesota Archaeologist* 46:3-15.

1988 A Note on the Southern Limit of the Distribution of Sandy Lake Pottery in Minnesota. *The Minnesota Archaeologist* 47(1):49-52.

**Loftus, Michael K.**

1977 A Late Historic Period Chippewa Sugar Maple Camp. *The Wisconsin Archaeologist* 58(1):71-76.

**Lothson, Gordon A.**

1972 *Burial Mounds of the Mille Lacs Lake Area*. Unpublished M.A. thesis, Department of Anthropology, University of Minnesota, Minneapolis.

**Lovick, Steven K.**

1983 Fire-Cracked Rock as Tools: Wear Pattern Analysis. *Plains Anthropologist* 28(99):41-52.

**Low, Bruce**

1996 Swan River Chert. *Plains Anthropologist* 41(156):165-174.

**Lugenbeal, Edward N.**

1976 *The Archaeology of the Smith Site: A Study of the Ceramics and Culture History of Minnesota Laurel and Blackduck*. Unpublished Ph.D. dissertation, Department of Anthropology, University of Wisconsin, Madison.

1978 Brainerd Ware Occurrence and Chronological Relationships. In *Some Studies of Minnesota Prehistoric Ceramics: Papers Presented at the First Council for Minnesota Archaeology Symposium - 1976*, edited by Alan R. Woolworth and Mark A. Hall, pp. 47-56. Occasional Publications in Minnesota Anthropology No. 2, Minnesota Archaeological Society, Fort Snelling.

1982 The Ceramics of the White Oak Point Site. *The Minnesota Archaeologist* 41(2):5-33.

**Lynott, M.J., Jeff J. Richner, and M. Thompson**

1986 *Archeological Investigations at Voyageurs National Park: 1979 and 1980*. Occasional Studies in Anthropology No. 16, Midwest Archeological Center, Lincoln, Nebraska.

**MacLean, Laura**

1995 *Analysis of Textile Impressions from Pottery of the Selkirk Composite*. Unpublished M.A. thesis, Department of Anthropology and Archaeology, University of Saskatchewan, Saskatoon.

**MacNeish, Richard S.**

1954 *The Stott Mound and Village, Near Brandon, Manitoba*. Annual Report for the Fiscal Year 1952-1953, National Museum of Canada Bulletin No. 132, Ottawa.

1958 *An Introduction to the Archaeology of Southeast Manitoba*. National Museum of Canada Bulletin No. 157, Department of Northern Affairs and National Resources, Ottawa.

**Magee, Michael**

1997 *Faunal Analysis of the Sanderson Site (DhMs-12), Block Seven West*. Unpublished Master's thesis, Department of Anthropology and Archaeology, University of Saskatchewan, Saskatoon.

**Malainey, Mary Evelyn**

1991 *Internal and External Relationships of Saskatchewan Plains Pottery Assemblages: Circa A. D. 1300 to Contact*. Unpublished Master's thesis, Department of Anthropology and Archaeology, University of Saskatchewan, Saskatoon.

1995a Functional Analysis of Precontact Pottery from West-Central Canada. *Manitoba Archaeological Quarterly* 5(2):60-86.

1995b The Lozinsky Site: A Late Pre-contact Bison Processing Camp. In *Occasional Papers of the Saskatoon Archaeological Society Number 1*, edited by David Meyer and Charles Ramsay, pp. 73-205. Saskatoon Archaeological Society, Saskatoon.

1997 *The Reconstruction and Testing of Subsistence and Settlement Strategies for the Plains, Parkland, and Southern Boreal Forest*. Unpublished Ph.D thesis, Department of Anthropology, University of Manitoba, Winnipeg.

**(M.C.H.C.) Manitoba Culture, Heritage, and Citizenship**

1990 *The Dakota Fortified Camps of the Portage Plain*. Historic Resources Branch, Winnipeg.

**(M.C.H.R.) Manitoba Culture, Heritage, and Recreation**

1989 *Wild Ricing in Manitoba*. Historic Resources Branch, Winnipeg.

**Mason, Ronald J.**

1981 *Great Lakes Archaeology*. Academic Press, New York.

**Mayer-Oakes, William J.**

1967 Prehistoric Human Population History of the Glacial Lake Agassiz Region. In *Life, Land and Water: Proceedings of the 1966 Conference on Environmental Studies of the Glacial Lake Agassiz Region*, edited by William J. Mayer-Oakes, pp. 339-378. University of Manitoba Press, Winnipeg.

1970 *Archaeological Investigations in the Grand Rapids, Manitoba, Reservoir, 1961-1962*. Occasional Papers of the Department of Anthropology, No. 3, University of Manitoba, Winnipeg.

**McAndrews, John H.**

1969 Paleobotany of a Wild Rice Lake in Minnesota. *Canadian Journal of Botany* 47:1671-1679.

**McKern, William C.**



1939 The Midwestern Taxonomic Method As An Aid to Archaeological Culture Study. *American Antiquity* 4(4):301-313.

1963 *The Clam River Focus*. Publications in Anthropology No. 9, Milwaukee Public Museum.

**McNally, Robert Hugh**

1990 Recording the Jadel Lake Petroform Complex. In *First Annual Archaeological Report, Ontario 1990*, edited by Peter L. Storck, pp. 98-99. The Ontario Heritage Foundation, Toronto.

**Meyer, David**

1978 The Clearwater Lake Phase: A Saskatchewan Perspective. *Archae-facts: Journal of the Archaeological Society of South-western Manitoba* 5(2&3):27-42.

1978 Prehistoric Pottery from Northern Saskatchewan. *Na'páo: A Saskatchewan Anthropology Journal* 8(1&2):5-30.

1981 Late Prehistoric Assemblages from Nipawin: The Pehonan Complex. *Saskatchewan Archaeology* 2:4-38.

1984 Anent the Pehonan Complex. *Saskatchewan Archaeology* 5:43-46.

1998 Late Woodland Pottery from the Goldsworthy Site: A Rainy River Assemblage in East Central Saskatchewan. *Canadian Journal of Archaeology* 22(1):43-80. Issued in April 1999.

**Meyer, David, and Henry Epp**

1990 North-South Interaction in the Late Prehistory of Central Saskatchewan. *Plains Anthropologist* 35(132):321-342.

**Meyer, David, Terry Gibson, and Dale Russell**

1992 The Quest for Pasquatinow: An Aboriginal Gathering Centre in the Saskatchewan River Valley. *Prairie Forum: The Journal of the Canadian Plains Research Center* 17(2):201-223.

**Meyer, David, and Scott Hamilton**

1994 Neighbors to the North: Peoples of the Boreal Forest. In *Plains Indians, A.D. 500-1500: The Archaeological Past of Historic Groups*, edited by Karl H. Schlesier, pp. 96-127. University of Oklahoma Press, Norman.

**Meyer, David, and Dale Russell**

1987 The Selkirk Composite of Central Canada: A Reconsideration. *Arctic Anthropology* 24(2):1-31

**Meyer, David, and Paul C. Thistle**

1995 Saskatchewan River Rendezvous Centers and Trading Posts: Continuity in a Cree Social Geography. *Ethnohistory* 42(3):403-444.

**Michlovic, Michael G.**

1982 Report on the Red River Archaeological Survey in Norman County, Minnesota. *The Minnesota Archaeologist* 41:53-69.

- 1983 The Red River Valley in the Prehistory of the Northern Plains. *Plains Anthropologist* 28(99):23-31.
- 1985 The Problem of Teton Migration. In *Archaeology, Ecology and Ethnohistory of the Prairie-Forest Border Zone of Minnesota and Manitoba*, edited by Janet Spector and Elden Johnson, pp. 131-145. Reprints in *Anthropology*, Vol. 31, J & L Reprint Company, Lincoln, Nebraska.
- 1987 The Archaeology of the Mooney Site (21 NR 29). *The Minnesota Archaeologist* 46(2):39-66.
- 1988 The Archaeology of the Red River Valley. *Minnesota History* 51:55-62.

**Michlovic, Michael G., and Fred Schneider**

- 1988 *The Archaeology of the Shea Site*. Submitted to the State Historical Society of North Dakota, Bismarck.
- 1993 The Shea Site: A Prehistoric Fortified Village on the Northeastern Plains. *Plains Anthropologist* 38(143):117-137.

**Michlovic, Michael G., and Fern E. Swenson**

- 1998 Northeastern Plains Village Pottery. *North Dakota History* 65(2-3):11-25.

**Moodie, D. Wayne**

- 1992 Manomin: Historical-Geographical Perspectives on the Ojibwa Production of Wild Rice. In *Aboriginal Resource Use in Canada: Historical and Legal Aspects*, edited by Kerry Abel and Jean Friesen, pp. 71-79. University of Manitoba Press, Winnipeg.

**Moravetz, Iosif, and Sandra Jezik**

- 1994 Ceramic Analysis of the Bensa Tanki Site (EfLq-4). *Manitoba Archaeological Journal* 4(1&2):76-99.

**Nicholson, B.A.**

- 1976 A Study of Projectile Point Typology at the Stott Site, DIMa-1, and Some Observations on Basal Attrition. *Archaeology in Montana* 17(1&2):53-82.
- 1988 Modeling Subsistence Strategies in the Forest/Grassland Transition Zone of Western Manitoba During the Late Prehistoric and Early Historic Periods. *Plains Anthropologist* 33(121):351-365.
- 1990 Ceramic Affiliations and the Case for Incipient Horticulture in Southwestern Manitoba. *Canadian Journal of Archaeology* 14:33-59.
- 1991 Modeling a Horticultural Complex in South-central Manitoba During the Late Prehistoric Period - The Vickers Focus. *Midcontinental Journal of Archaeology* 16(2):163-188.
- 1993 Variables Affecting Site Selection by Late Prehistoric Groups Following a Hunting/Horticultural Lifeway in South-Central Manitoba. In *Culture and Environment: A Fragile Coexistence, Proceedings of the Twenty Fourth Annual Conference of the Archaeological Association of the University of Calgary*, edited

by Ross W. Jamieson, Sylvia Abonyi and Neil A. Mirau, pp. 211-219. The University of Calgary Archaeological Association, Calgary.

1994 Brandon University Radiocarbon Dates. *Manitoba Archaeological Journal* 4(1&2):200-203.

1996 Late Prehistoric and Protohistoric Settlement and Subsistence in Southern Manitoba. In *The Geography of Manitoba: Its Land and Its People*, edited by John Welsted, John Everitt, and Christoph Stadel, pp. 65-78. The University of Manitoba Press, Winnipeg.

**Nicholson, B.A., and Gaye Burton-Coe**

1992 *Final Report on the Testing of the Duthie Site (DiMe-16)*. Ms. on file, Archaeological Laboratory, Brandon University, Brandon, Manitoba.

**Nicholson, B.A., and Scott Hamilton**

1997 Material Correlates Accompanying Transition by Vickers Focus People from a Horticulture/Forager Economy to an Intensive Forager/Bison Economy. *Manitoba Archaeological Journal* 7(2):24-37.

**Nicholson, B.A., and Mary Malainey**

1993 Sub-ploughzone Testing at the Lowton Site (DiLv-3): The Vickers Focus Type Site in Southwest Manitoba. *Canadian Journal of Archaeology* 19:87-100.

**Orr, Ellison**

1914 Indian Pottery of the Oneota or Upper Iowa River Valley in Northeastern Iowa. *Proceedings (Iowa Academy of Science)* 21:231-239.

**Ossenberg, N.S.**

1974 Origins and Relationships of Woodland Peoples: The Evidence of Cranial Morphology. In *Aspects of Upper Great Lakes Anthropology: Papers in Honor of Lloyd A. Wilford*, edited by Elden Johnson, pp. 15-39. Minnesota Prehistoric Archaeology Series No. 11, Minnesota Historical Society, St. Paul.

**Pankratz, Valerie**

1996 *Investigations of the Ceramic Component at the Bradshaw and Schuddemat Sites in Southwestern Manitoba*. Unpublished B.A. Specialist thesis, Department of Sociology and Anthropology, Brandon University, Brandon, Manitoba.

**Paquin, Todd Antoine**

1995 *Pottery Styles as Indicators of Cultural Patterns: The Kisis Complex*. Unpublished Master's thesis, Department of Anthropology and Archaeology, University of Saskatchewan, Saskatoon.

**Participants of the Lake Superior Basin Workshop (1988)**

1987 Desperately Seeking Siouans: The Distribution of Sandy Lake Ware. Compiled by Grace Rajnovich. *The Western Canadian Anthropologist* 4:57-64 (issued late). Also in *Manitoba Archaeological Quarterly* 12(1):49-56; Ontario Archaeological Society *Arch Notes* 88(3):9-13; *The Wisconsin Archaeologist* 69(4):337-353; and *The Minnesota Archaeologist* 47(1):43-48 (issued in 1991).

**Pastershank, Georgine**

1989 *An Archaeological Survey of Sabaskong Bay, Lake of the Woods*. Ontario Ministry of Culture and Communications, Conservation Archaeology Final Report #13, Northwestern Region, Kenora.

**Penman, John T., and Norman C. Sullivan**

1995 Late Prehistoric Mortuary Practices in the Upper Mississippi Valley. *The Minnesota Archaeologist* 54:130-141, Omnibus Edition, Volumes 51-54 (1992-1995), issued in 1997.

**Peterson, Lynelle A.**

1986 *An Attribute Analysis of Sandy Lake Ware from Norman County and North Central Minnesota*. Unpublished Master's thesis, Department of Anthropology, University of Nebraska, Lincoln.

**Pettipas, Leo**

1997 Ethnic Markers in Precontact Manitoba: A Review. *Manitoba Archaeological Journal* 7(2):64-72.

**Picha, Paul R., and Michael L. Gregg**

1994 Devils Lake Basin and Upper James River Valley Archaeology: Results of SI-RBS and Later Investigations Contrasted. *North Dakota Archaeology: Journal of the North Dakota Archaeological Association* 5:67-96.

**Playford, Tomasin**

1994 *A Report of the 1993 Excavations at the Good Site (DjMb-16)*. Paper presented at the Fourth Annual APALA Student Conference, Brandon, Manitoba.

**Pufahl, John K.**

1990 Conserving Aspects of Native Culture Through Pictograph Documentation in Northwestern Ontario. In *First Annual Archaeological Report, Ontario 1990*, edited by Peter L. Storck, pp. 15-16. The Ontario Heritage Foundation, Toronto.

**Quigg, J. Michael**

1983 The Lloyd Site (FhNa-35): Final Report. In *Nipiwini Reservoir Heritage Study Volume 6: 1982 Final Excavations: The Permanent Camp, Minnie and Lloyd Sites*, edited by David Meyer, pp. 67-213. Saskatchewan Research Council Publication no. E-903-6-E-83, Saskatoon.

**Quimby, George Irving**

1960 *Indian Life in the Upper Great Lakes: 11,000 B.C. to A.D. 1800*. The University of Chicago Press, Chicago.

**Rajnovich, Grace**

1983 *The Spruce Point Site: A Comparative Study of Selkirk Components in the Boreal Forest*. Ontario Ministry of Citizenship and Culture, Conservation Archaeology Final Report 1, Northwestern Region, Kenora.

1984 A Study of Possible Prehistoric Wild Rice Gathering on Lake of the Woods, Ontario. *North American Archaeologist* 5(3):197-215.

**Rajnovich, M.G.N., and C.S. Reid**

1978 Selkirk and Clearwater Lake Ceramics on Lake of the Woods: An Overview. *Archae-facts: Journal of the Archaeological Society of South-western Manitoba* 5(2,3):43-48.

**Ray, Arthur J.**

1974 *Indians in the Fur Trade: Their Role as Hunters, Trappers, and Middlemen in the Lands Southwest of Hudson Bay 1660-1870*. Reprinted 1991. University of Toronto Press, Toronto, Ontario.

**Ready, Tim**

1979a Ogechie Series. In *A Handbook of Minnesota Prehistoric Ceramics*, edited by Scott F. Anfinson, pp. 143-148. Occasional Publications in Minnesota Anthropology No. 5. Minnesota Archaeological Society, Fort Snelling.

1979b Kathio Series. In *A Handbook of Minnesota Prehistoric Ceramics*, edited by Scott F. Anfinson, pp. 103-107. Occasional Publications in Minnesota Anthropology No. 5. Minnesota Archaeological Society, Fort Snelling.

**Reid, C.S. (or C.S. "Paddy")**

1984 Some Woodland Radiocarbon Dates from Northwestern Ontario with Comments on Significance. *Ontario Archaeology* 41:37-44.

1988 Some Ideas Concerning the Formulation of Research Designs and Excavation Methodologies on Boreal Forest Habitation Sites. *Midcontinental Journal of Archaeology* 13(2):187-221.

**Reid, C.S. "Paddy", and Donald G. MacLeod**

1980 Rushing River Park (DkKn-1): An Early Contact Site in the Lake of the Woods Area. In *Northern Ontario Fur Trade Archaeology: Recent Research*, edited by C.S. "Paddy" Reid, pp. 132-138. Archaeological Research Report 12, Historical Planning and Research Branch, Ontario Ministry of Culture and Recreation, Toronto.

**Reid, C.S. "Paddy", and Grace Rajnovich**

1980 Ash Rapids Corded: Newly Defined Late Woodland Ceramics from Northwestern Ontario. *Ontario Archaeology* 34:69-86.

1991 Laurel: A Re-evaluation of the Spatial, Social, and Temporal Paradigms. *Canadian Journal of Archaeology* 15:193-234.

**Reid, Peter E.W.**

1972 *An Analysis of Ceramics from the Lowton Site*. Unpublished M.A. thesis, Department of Anthropology, University of Manitoba, Winnipeg.

**Rice, Prudence M.**

1976 Rethinking the Ware Concept. *American Antiquity* 41(4):538-543.

1987 *Pottery Analysis: A Sourcebook*. The University of Chicago Press, Chicago.

**Richner, Jeff J.**

1992 *Archeological Survey and Testing at Voyageurs National Park: 1985-1991*. Manuscript on file, Midwest Archeological Center, Lincoln, Nebraska.

**Riddle, David K.**

1980 Archaeological Survey of the Upper Albany River. In *Studies in West Patricia Archaeology No. 1: 1978-1979*, edited by C.S. Reid, pp. 152-213. West Patricia Heritage Resource Report 1, Archaeological Research Report 15, Historical Planning and Research Branch, Ontario Ministry of Culture and Recreation, Toronto.

**Romano, A.D., D.D.S.**

1992 A Pine County Woodland Clay Source: Associated Artifacts and Experimental Ceramic Production. *The Minnesota Archaeologist* 51:30-36, Omnibus Edition, Volumes 51-54 (1992-1995), issued in 1997.

**Russell, Dale R.**

1991 *Eighteenth-Century Western Cree and Their Neighbours*. Archaeological Survey of Canada, Mercury Series, Paper 143. Canadian Museum of Civilization, Hull, Quebec.

**Rye, Owen S.**

1981 *Pottery Technology: Principles and Reconstruction*. Manuals in Archaeology No. 4, Taraxacum, Washington, D.C.

**Salzer, Robert J.**

1974 The Wisconsin North Lakes Project: A Preliminary Report. In *Aspects of Upper Great Lakes Anthropology: Papers in Honor of Lloyd A. Wilford*, edited by Elden Johnson, pp. 40-54. Minnesota Prehistoric Archaeology Series No. 11, Minnesota Historical Society, St. Paul.

1980 *The Morty Site*. Manuscript on file, Midwest Archaeology Center, Lincoln, Nebraska.

1986 Chapter 5D: Other Late Woodland Developments. *The Wisconsin Archaeologist* 67(3-4):302-313.

**Saylor, Barbara J.**

1989 EgKx-1, Wanipigow: A Descriptive Summary of the Laurel Ceramics. *Manitoba Archaeological Quarterly* 13(1-4):136-208.

**Saylor, Stan G.**

1977 *The 1976 Excavations at EgKx-1, Wanipigow Lake*. Preliminary Report 4, Papers in Manitoba Archaeology. Historic Resources Branch, Department of Tourism, Recreation, and Cultural Affairs, Winnipeg.

1978a An Introduction to Fabric Impressions on Selkirk Ware. *Archaeofacts: Journal of the Archaeological Society of South-western Manitoba* 5(2,3):49-56.

1978b The 1977 Season at Wanipigow Lake (EgKx-1), Manitoba. *Archaeofacts: Journal of the Archaeological Society of South-western Manitoba* 5(2,3):8.

1989 EgKx-1, Wanipigow: Introduction and Background. *Manitoba Archaeological Quarterly* 13(1-4):1-28.

**Schlesier, Karl H.**

1994 Commentary: A History of Ethnic Groups in the Great Plains, A.D. 150-1500. In *Plains Indians, A.D. 500-1500: The Archaeological Past of Historic Groups*, edited by Karl H. Schlesier, pp. 308-381. University of Oklahoma Press, Norman.

**Schneider, Fred E.**

1982 A Model of Prehistoric Cultural Developments in the James River Valley of North Dakota. *Journal of the North Dakota Archaeological Association* 1:113-133.

**Schneider, Fred E., and Jeff Kinney**

1978 Evans: A Multi-component Site in Northwestern North Dakota. *Archaeology in Montana* 19(1&2):1-30.

**Shay, C. Thomas**

1985 Late Prehistoric Selection of Wild Ungulates in the Prairie-Forest Transition. In *Archaeology, Ecology and Ethnohistory of the Prairie-Forest Border Zone of Minnesota and Manitoba*, edited by Janet Spector and Elden Johnson, pp. 31-64. Reprints in *Anthropology*, Vol. 31, J & L Reprint Company, Lincoln, Nebraska.

**Shepard, Anna O.**

1974 *Ceramics for the Archaeologist*. Reprinted. Sauls Lithographic Company, Inc., Washington, D.C. Originally published 1954, Publication 609, Carnegie Institution of Washington, Washington, D.C.

**Shields, P.**

1983 *Materials Characterization Description of Pottery Sherds from Project 21NR29*. On file at Moorhead State University, Moorhead, University.

**Simon, Arleyn**

1979 Pottery Manufacture Analysis: Experimental Assessment of Technological Continuity in the Altamont Region. *Archaeology in Montana* 20(2):1-78.

**Snortland, J. Signe**

1994 Northern Plains Woodland Mortuary Practices. In *Skeletal Biology in the Great Plains: Migration, Warfare, Health and Subsistence*, edited by Douglas W. Owsley and Richard L. Jantz, pp. 51-70. Smithsonian Institution Press, Washington, D.C.

**Snortland-Coles, J. Signe**

1979 *The Duck River or Aschkibokahn Site of West-Central Manitoba: The Role of the Northern Marsh in the Subsistence of Late Woodland Peoples*. Final Report No. 7, Papers in Manitoba Archaeology, Historic Resources Branch, Department of Tourism and Cultural Affairs, Winnipeg.

1985 Section 1. Ceramic Analysis. In *The Jamestown Mound Project: Volume 1 Archaeology*, edited by J. Signe Snortland-Coles, pp. 5.1-5.40. Funded by the State of North Dakota Emergency Commission, Burlington Northern Foundation, and Jamestown Service Clubs. On file at the North Dakota Historical Society, Bismark.

**Spector, Janet D.**

1985 Ethnoarchaeology and Little Rapids: A New Approach to 19th Century Eastern Dakota Sites. In *Archaeology, Ecology and Ethnohistory of the Prairie-Forest Border Zone of Minnesota and Manitoba*, edited by Janet Spector and Elden Johnson, pp. 167-203. Reprints in *Anthropology*, Vol. 31, J & L Reprint Company, Lincoln, Nebraska.

**Spiedel, Paul Charles Adam**

1989 *An Analysis of the Bundoran Site (DjKn-5)*. Ontario Ministry of Culture and Communications, Ontario Conservation Archaeology Report #15, Northwestern Region, Kenora.

**Swenson, Fern E.**

1987 Prehistoric Ceramics from the Naze Site. In *Archaeological Excavation at the Naze Site (32SN246)*, edited by Michael L. Gregg, pp. 123-183. Department of Anthropology, University of North Dakota, Grand Forks, ND. Report prepared for U.S. Department of the Interior, Bureau of Reclamation, Billings, Montana. Contract 4-CS-60-00630, Work Order No. 5.

**Swenson, Fern E., and Michael L. Gregg**

1988 A Devils Lake-Sourisford Mortuary Vessel from Southeastern North Dakota. *Journal of the North Dakota Archaeological Association* 3:1-15.

**Syms, E. Leigh**

1974 History of a Refuse Pit: Interpreting Plains Camp Activity at a Microcosmic Level. *Plains Anthropologist* 19(66):303-315.

1977 Cultural Ecology and Ecological Dynamics of the Ceramic Period in Southwestern Manitoba. *Plains Anthropologist* Memoir 12 76(2):iii-160.

1979a The Snyder Dam Site (DhMg-37), Southwestern Manitoba: Two New Ceramic Components. *Canadian Journal of Archaeology* 3:41-67.

1979b The Devils Lake-Sourisford Burial Complex on the Northern Plains. *Plains Anthropologist* 24(86):283-308.

1980 *A Description and Analysis of the Nash Random Survey Sample, Southwestern Manitoba, 1972-1973: A Compendium*. Unpublished manuscript at the Archaeology Laboratory, Brandon University, Manitoba.

1981 An Unusual Notched Axe from South-Central Manitoba. *Archae-facts: Journal of the Archaeological Society of South-western Manitoba* 8(2):2-4.

**Tamplin, Morgan John**

1977 *Prehistoric Occupation and Resource Exploitation on the Saskatchewan River at the Pas, Manitoba*. Unpublished Ph.D. dissertation, Graduate College, University of Arizona. University Microfilms International, Ann Arbor, Michigan.

**Taylor, Jill S.**

1992 *Report on a First Field Season at the Heron Site (DiLv-13)*. Paper presented at the First Manitoba Universities Anthropology Student Conference (MUASC), Winnipeg.



- 1994a *An Analysis of the Ceramics Recovered During 1992 and 1993 at the Precontact Duthie Site (DiMe-16)*. Unpublished B.A. Specialist thesis, Department of Sociology and Anthropology, Brandon University, Brandon, Manitoba.
- 1994b *The Duthie Site (DiMe-16) in the Lauder Sandhills: A Report on the Loop Handle Vessel and Evidence of Southern Influence*. Paper presented at the Fourth Annual APALA Student Conference, Brandon, Manitoba.
- 1995a *The Duthie Site in Southwestern Manitoba: A Case for Multicultural Interactions*. Paper presented at the 53rd Annual Plains Anthropological Conference, Laramie, Wyoming.
- 1995b *Life in the Lauder Sandhills: Precontact Interactions at the Duthie Site as Reflected by Ceramics*. Paper presented at the 28th Annual Canadian Archaeological Association Meeting, Kelowna, British Columbia.
- 1995c *The Sherwin Campbell Collection and Tschetter Site: Two More Pieces to the Puzzle of 'Old Women's Phase'*. Paper prepared for graduate class in Fall 1995.
- 1996a Results of the Field School at the Duthie Site in Southwestern Manitoba. In *Proceedings and Abstracts: 6th Annual APALA Student Conference: January 12-14, 1996*, edited by Bruce D. Low and Rob Wondrasek, pp. 92-97. University of Saskatchewan, Saskatoon.
- 1996b Memories of Mini-University in Manitoba: Testing the Previously Proven Archaeology Program in the Field. In *Proceedings and Abstracts: 6th Annual APALA Student Conference: January 12-14, 1996*, edited by Bruce D. Low and Rob Wondrasek, pp. 183-187. University of Saskatchewan, Saskatoon.
- 1997 Go West! New Insights About *Psinomani* (Sandy Lake Ware). In *Proceedings of the 7th Annual APALA Student Conference*, edited by Maire Anderson-McLean, pp. 117-129. University of Alberta, Edmonton.

#### **Taylor-Hollings, Jill**

- 1998 Results of the 1997 Crystal Beach Road Site Education and Public Archaeology Project. In *Proceedings and Abstracts of the 8th Annual APALA Student Conference, January 23rd-25th, 1998, University of Saskatchewan, Saskatoon*, edited by Laurie L. Carson, Nathan Friesen, Jill Taylor-Hollings, and Sandra Pentney, pp. 216-223. Apex Graphics, Saskatoon.

#### **Thomas, A.G., and J.M. Stewart**

- 1969 The Effect of Water Depths on the Growth of Wild Rice. *Canadian Journal of Botany* 47:1525-1531.

#### **Thompson, Bob**

- n.d. *Analysis of an Additional Sample of Ceramics from the Gordon Randall Collection from the Killarney Region of South-Central Manitoba*. Unpublished manuscript, Archaeology Laboratory, Brandon University. This may have been written in 1979, as suggested by the editor in Callaghan (1979).

#### **Thompson, Robert G., Rose A. Kluth, and David W. Kluth**

1994 Tracing the Use of Brainerd Ware Through Opal Phytolith Analysis of Food Residue. *The Minnesota Archaeologist* 53:86-95, Omnibus Edition, Volumes 51-54 (1992-1995), issued in 1997.

**Thwaites, R.G. (editor)**

1959 *The Jesuit Relations and Allied Documents*. Reprinted. Pageant Book Company, New York. Originally published 1896-1901. Burrows Brothers, Cleveland, Ohio.

**Tiffany, Joseph A.**

1974 An Application of Eigenvector Techniques to the Seed Analysis of the Brogley Rockshelter (47-GT-156). *The Wisconsin Archaeologist* 55(1):2-41.

**Tisdale, Mary Ann**

1978 *Investigations at the Stott Site: A Review of Research from 1947 to 1977*. Papers in Manitoba Archaeology, Final Report No. 5. Department of Tourism & Cultural Affairs, Historic Resources Branch.

**Trottier, Phillippe G.**

1973 A Preliminary Report on the Falcon Lake Site (C3-UN-35) Whiteshell Provincial Park, Manitoba. *Manitoba Archaeological Newsletter* 10(3&4):3-68.

**Turnbaugh, William A., Robert Jurmain, Harry Nelson, and Lynn Kilgore**

1996 *Understanding Physical Anthropology and Archaeology*. 6th ed. West Publishing Company, Minneapolis/St. Paul, Minnesota.

**Valppu, Seppo H.**

1989 *Paleoethnobotany of Big Rice Site, St. Louis County, Minnesota: Early Wild Rice (*Zizania aquatica* L.) in Archaeological Context*. Unpublished Master's thesis, Department of Anthropology, University of Minnesota, Duluth.

**Van Dyke, Allen P., and Edgar S. Oerichbauer**

1988 The Clam River Focus Revisited: Excavations at 47 BT-36, Burnett County, Wisconsin. *The Wisconsin Archaeologist* 69(3):139-162.

**Vehik, Susan**

1979 *An Archaeological Survey of Selected Portions of the Lower and Middle Sheyenne River Basin in North Dakota*. U.S. Army Corps of Engineers, St. Paul, Minnesota.

**Vennum, Jr., Thomas**

1988 *Wild Rice and the Ojibway People*. Minnesota Historical Society Press, St. Paul.

**Vickers, Chris**

1945 Archaeology in the Rock and Pelican Lake Area of South-Central Manitoba. *American Antiquity* X1(2):88-94.

1948 Cultural Affinity in the Minnesota-Manitoba Region. *The Minnesota Archaeologist* 14(2):38-41.

1949 *Archaeological Report 1948*. Projects of the Historical and Scientific Society of Manitoba.

- 1950 *Archaeological Report 1949*. Projects of the Historical and Scientific Society of Manitoba.
- 1951 *Archaeological Report 1950*. Projects of the Historical and Scientific Society of Manitoba.
- Voth, Nancy**  
1996 The Duthie Site 1994: A General Overview. *Manitoba Archaeological Journal* 6(1):40-48.
- Walde, Dale**  
1994 *The Mortlach Phase*. Unpublished Ph.D. dissertation, Department of Archaeology, University of Calgary, Calgary.
- Walde, Dale, David Meyer, and Wendy Unfreed**  
1995 The Late Period on the Canadian Plains and Adjacent Plains. *Journal of American Archaeology* 9:7-66. (a.k.a. *Revista de Arqueología Americana*)
- Walker, Leanne**  
1996a The Heron Site: A Local Trip to the Mall. In *Proceedings and Abstracts: 6th Annual APALA Student Conference: January 12-14, 1996*, edited by Bruce D. Low and Rob Wondrasek, pp. 103-106. University of Saskatchewan, Saskatoon.  
1996b *A Descriptive Analysis of the Heron Site*. Unpublished B.A. Specialist thesis, Department of Sociology and Anthropology, Brandon University, Brandon, Manitoba.
- Wedel, Waldo R.**  
1957 *Observations on Some Nineteenth-Century Pottery Vessels From the Upper Missouri*. Smithsonian Institution, Bureau of American Ethnology, Anthropological Papers No. 51, Bulletin 164. United States Government Printing Office, Washington, D.C.
- Welsted, John, John Everitt, Christoph Stadel**  
1996 *The Geography of Manitoba: Its Land and Its People*. University of Manitoba Press, Winnipeg.
- Wettlaufer, Boyd N.**  
1955 *The Mortlach Site in the Besant Valley of Central Saskatchewan*. Anthropological Series No. 1, Saskatchewan Museum of Natural History, Regina.
- Wettlaufer, Boyd N., and William J. Mayer-Oakes**  
1960 *The Long Creek Site*. Edited by William J. Mayer-Oakes. Anthropological Series No. 2, Saskatchewan Museum of Natural History, Regina.
- Wheeler, R.P.**  
1963 *The Stutsman Focus: An Aboriginal Culture Complex in the Jamestown Reservoir Area, North Dakota*. River Basin Surveys Papers, No. 30, Smithsonian Institution, Bureau of American Ethnology, Bulletin 185:167-230. U.S. Government Printing Office, Washington, D.C.
- Whelan, James Patrick**

1976 Projectile Point Varieties from the Brockington Site (DhMg-7) in Southwestern Manitoba. *Na'páo: A Saskatchewan Anthropology Journal* 6(1&2):5-20.

**Wilford, Lloyd A.**

1941 A Tentative Classification of the Prehistoric Cultures of Minnesota. *American Antiquity* 3:231-249.

1945 The Prehistoric Indians of Minnesota: The Headwaters Lakes Aspect. *Minnesota History* 26(4):312-329.

1955 A Revised Classification of the Prehistoric Cultures of Minnesota. *American Antiquity* 21(2):130-142.

**Wilford, Lloyd A., Elden Johnson, and Joan Vicinus**

1969 *Burial Mounds of Central Minnesota*. Minnesota Prehistoric Archaeology Series No. 1, Minnesota Historical Society, St. Paul.

**Wiley, Gordon R., and Phillip Phillips**

1958 *Method and Theory in American Archaeology*. University of Chicago, Chicago.

**Wiley, Gordon R., and Jeremy A. Sabloff**

1980 *A History of American Archaeology*. 2nd ed. W.H. Freeman and Company, San Francisco, California.

**Wilson, Gilbert L.**

1977 Mandan and Hidatsa Pottery Making. *Plains Anthropologist* 22(76):97-105.

**Wood, W. Raymond**

1963 Lisbon Flared Rim and Owego Flared Rim Wares. Appendix In *The Stutsman Focus: An Aboriginal Culture Complex in the Jamestown Reservoir Area, North Dakota*. River Basin Surveys Papers, Number 30, Smithsonian Institution, Bureau of American Ethnology, Bulletin 185: 231-233, U.S. Government Printing Office, Washington, D.C.

1971 *Biesterfeldt: A Post-Contact Coalescent Site on the Northeastern Plains*. Contributions to Anthropology #15, Smithsonian Institution Press, Washington, D.C.

**Yarnell, Richard Asa**

1964 *Aboriginal Relationships Between Culture and Plant Life in the Upper Great Lakes Region*. Museum of Anthropology, Anthropological Papers No. 23, University of Michigan, Ann Arbor.

**Zimmerman, Larry J.**

1985 *Peoples of Prehistoric South Dakota*. University of Nebraska Press, Lincoln.

**Zoltai, Steve L.**

1989a Macrofossil Studies, EgKx-1: Evaluation of Upland Botanical Remains from the Wanipigow Lake Beach (1976) and Cabin Point (1977) Site Areas. *Manitoba Archaeological Quarterly* 13 (1-4):66-136.

1989b Soil Analysis: A Preliminary Study of the EgKx-1 Cabin Point Site Area and Regional Survey Areas (1977). *Manitoba Archaeological Quarterly* 13 (1-4):29-65.

## APPENDIX A: GLOSSARY

This glossary clarifies the meaning of some descriptive terms used by the author. It also defines some descriptors that were not explained completely within this thesis or those which have been abbreviated. Since SLW was defined in Minnesota, some of the terms used there were listed. However, most of these definitions are used by Canadian archaeologists. Generally, the author has attempted to use existing terms to promote consistency (e.g. Hartlen 1996a, Pankratz 1996a, and Taylor 1994a all used the descriptive terminology defined by Malainey 1991, since these studies were in adjacent regions).

**A.D.** *Anno domini*, which indicates the time from 0 to the present date; **B.C.**, which indicates the time Before Christ, is used before 0. While a radiocarbon determination is first given in B.P. (see below), a calibrated date is given in the A.D. time frame.

**Archaic** An archaeological tradition that followed the Paleoindian peoples and lasted until about 500 B.C., when people began exhibiting more regionally based hunting and gathering economies and used ground stone tools as well as spear points with notched and stemmed bases (Anfinson 1997:144).

**Area** One of the spatial divisions in North American archaeology defined by Willey and Phillips (1958:18-21) which are:

**Site** single location of human activity (e.g. small camp to large city)

**Locality** site to community size (e.g. more than one site of a culture)

**Region** considerably larger unit of space; related to geography (e.g. Florida Glades)

**Area/subarea** larger than region; similar to ethnographic areas (e.g. Southwest U.S.)

**Aspect** see MTS system

**Assemblage** Syms' system-a group of artifacts at a site

**Base** see MTS system

**Biface** A stone tool with flake scars on both sides or faces

**Boss** The convex, decorative impression created when a punctate displaced clay

**B.P.** Before present (set at 1950, after radiocarbon dating was invented)

**Brim** Malainey (1991:39) used this term to describe the top of the lip, or the terminus of the vessel walls.

**Burial types** Primary burials contain human remains that were buried when the body was intact. Extended primary burials have the person laying down, while flexed ones indicate that the body was bent (e.g. the fetal position). Secondary burials contain remains of only portions of a body. Sometimes these were deposited in bundles.

**<sup>14</sup>C** Abbreviation for chronometric radiocarbon dating. A method used for determining the age of organic materials, particularly from archaeological sites, using the steady rate of carbon isotope decay as a measure. The half life of carbon 14 changing to carbon 12 is 5,730 years (Turnbaugh et al. 1996:422, 590).

**Ceramics** Generally, ceramics are objects made of fired clay. Specifically, this may be referred to as vitrified, wheel made, often glazed fired clay objects made in the Old World.

**Clay minerals** "A group of minerals forming extremely small crystalline particles and consisting essentially of hydrous aluminum silicate, although magnesium or iron partially or fully replaces alumina in some, and alkalis or alkaline earths are essential constituents of others" (Shepard 1974:369). Several main groups of clay minerals are montmorillonite, kaolin, and illite. Clay may contain one clay mineral and varying amounts of other minerals (Shepard 1974:369).

**Coil break** Evidence of the coiled manufacturing technique on a pottery vessel; it indicates hand building and is usually found on Middle Woodland pots.

**Component** MTS and Willey and Phillips systems-smallest unit of archaeological classification; on a site basis

**Complex** see Syms' system

**Composite** see Syms' system

**Configuration** see Syms' system

**Conical** A vessel with a general elongated shape and a flat to slightly rounded base (e.g. Avonlea pottery)

**Conoidal** A vessel with a general elongated shape and a cone shaped base (e.g. Laurel pottery)

**Constricted neck** A pottery neck that narrows slightly towards the interior of the vessel

**Cord impressed** A single twisted fibre cord was impressed in clay to produce this decoration.

**Cordmarked** Also known as cord roughened, cord marked, or corded. A twisted cord wrapped paddle would be used to create overlapping patterns on the exterior of a vessel.

**Cord wrapped object impressed (CWOI)** Also known as cord wrapped tool impressed. This decoration was produced when a twig or other object was wrapped with a twisted cord and impressed into the clay.

**Corner** The point where a rim meets the lip of a vessel is a corner, designated by the inner and outer portions (Malainey 1991:39).

**Culture** Willey and Phillips system-large scale classification, consists of traditions or horizons

**Dentate** A serrated tool was used to produce this decoration, which appears to be a series of small squares or rectangles.

**Flared** An outflared vessel rim, as opposed to straight or inflated rims

**Focus** see MTS system; spatially restricted

**Globular** A vessel which has a round bottom, rather than a conoidal or conical termination

**In situ** A Latin phrase meaning 'in place', which refers to archaeological remains found as they were originally deposited.

**Incised** This decoration is produced by running a sharp tool through clay, producing lines.

**Inner rim** The area between the lip and neck, but not including the neck (Peterson 1986:67)

**KRF** Knife River flint is a lithic material sourced along the banks of the Knife River and its tributaries in North Dakota. This brown chalcedony was widely used and traded across central North America for millenia (Ahler et al. 1991:v).

**Lithics** Artifacts made from stone, which range from a core (the beginning processes of stone tool manufacturing), debitage (flakes and shatter that become waste materials during this process), and tools (the more or less finished product of flintknapping).

**Locality** see Area

**mm** millimetre

**MHRC** The provincial archaeological branch was part of Manitoba Culture, Heritage, and Recreation at one time. Also known as Manitoba Culture, Heritage, and Citizenship

**MTS** The Midwestern Taxonomic System, proposed by William McKern in 1939, was created to classify artifacts from smallest to largest division: component, focus (spatially restricted), aspect, phase (temporally restricted), pattern, and base.

**Mississippian** An archaeological tradition, centred along the Mississippi River, which flourished from about A.D. 900 to 1300. These people made shell tempered pottery, lived in permanent villages, and cultivated intensively corn and other plants (Anfinson 1997:144).

**Mohs Hardness Scale** A simple test, which can be used in field studies, invented by Friedrich Mohs in 1882, which indicates the relative hardness of objects based on selected minerals (e.g. ranges from talc at 1 to diamond at 10) (Shepard 1974:115).

**Net impressed** A surface finish which has a net impression, consisting of single strands knotted together at right angles. Open spaces are visible between these knots and cords. Often found on Avonlea pottery



**Notched** Hartlen (1996a:105) described notching as the removal of clay to form a depression, which may be oval, rectangular, or v-shaped.

**Oblique** Malainey (1991:50) used this term for this orientation of decoration. A right oblique impression is oriented from upper right to lower left, and a left oblique decoration goes from the upper left to lower right, when viewing the surface to which the decoration has been applied.

**Obliterated** This surface finish is also known as smoothed over cord marked. An obliterated surface finish is a partially smoothed over texture such as a textile impression.

**Oxidized** Pottery which is a range of white, tan, orange, or red colours; all the constituents in the paste have taken in as much oxygen as possible. These colours depend on the particle size, amount, distribution, state, and combination of impurities, especially iron rich compounds (Shepard 1974:370-371).

**Overfired** Pottery fired to or above the point at which defects such as warping, blistering, and bloating occur. These effects might be caused by too rapid of firing or excessive temperature (Shepard 1974:370).

**Paleoindian** This North American archaeological tradition existed from 11,500 to 9,000 years ago, when people hunted large mammals using large lanceolate spear points (Anfinson 1997:144).

**Pattern** see MTS system

**Phase** Willey and Phillips system-consists of several components; it is generally areally restricted; the older MTS system has this temporally restricted

**Pinched** Finger pinched decoration

**Plain** Some archaeologists use this term to characterize smooth surface finish, but in this thesis, in indicates a vessel without decoration (e.g. Sandy Lake ware plain variant).

**Plains Village** An archaeological tradition of the Plains area, dating from A.D. 900 to 1700, characterized by maize horticulture, grit tempered globular vessels, semi-permanent villages, and small, triangular projectile points (Anfinson 1997:144).

**Pottery** Generally, pottery is a fired clay object. Specifically, it is an unvitified, unglazed, object that was hand built in the New World.

**Precontact** This term replaces the widely used term prehistoric, since the latter word implies that there was no history before European contact. In fact, native peoples used oral histories and pictographs to ensure the continuation of pertinent information. Protocontact is used instead of protohistoric and postcontact replaces historic.

**Punctate** A decorative impression, usually round, made on the surface of pottery by pointed implements (Anfinson 1997:145)

**Reduced** Pottery in which the iron oxide is present in the lower state of oxidation, and the colours are black to gray. This colouring is made by unoxidized carbonaceous matter or by carbon deposited during firing (Shepard 1974:370).

**Region** see Area

**S-rims** This profile is shaped like a large S, with the uppermost rim being incurvate, them flaring out, constricting at the neck, and flaring again at the shoulder.

**Sherd** a piece of broken pottery

**Short rim** According to Malainey (1991:37-39), these rims exhibit a short distance between the lip and neck. Some vessels from Saskatchewan have almost no rim area.

**Site** see Area

**SLW** Sandy Lake ware

**Smooth** A surface finish obtained by rubbing a leather hard (firm but not dry) surface with a hard, smoothed tool (Shepard 1974:370). Fine smoothing lines are often visible. This surface finish differs from an obliterated texture.

**Stamping** This surface finish is made by applying a grooved paddle to the outside of the vessel, creating check stamps in the form of diamonds, rectangles, or squares. Simple stamping is identified by parallel grooves and lower ridges that may alternate in direction.

**Straight rims** These rims show no curvature, in that exterior surfaces are flat with a concave interior surface (Syms 1980:33).

**Syms' System** Archaeological classification scheme devised by E. Leigh Syms in 1977. Smallest unit is the assemblage (at a site), complex (several sites), composite (several complexes), configuration (several composites), and pattern (configurations).

**Thermoluminescence dating** Also known as TL dating. A technique used for dating fired or burned archaeological materials, especially pottery, which release stored energy of radioactive decay as light when they are heated. Since clay often contains trace amounts of radioactive elements, when it is fired, the heating releases displaced electrons trapped within the clay (emitted a dull glow). Thereafter, radioactive decay resumes and builds up electrons at a steady rate. To TL date a piece of pottery, it is heated to over 500 degrees C, and its TL is measured to ascertain the date that it was originally fired (Turnbaugh et al. 1996:423, 591).

**Tool impression** Decoration formed by pressing an angular or round object into the clay (Syms 1980:37).

**Trailed** A decorative impression of shallow lines left behind by a blunt object that has been drawn through clay. Syms (1980:37) specified that this decoration was at least 3 mm wide and wider than its depth.

**Type** A group of artifacts which share stylistic attributes and used as a basic unit of archaeological analysis (Anfinson 1997:145).

**Type site** An archaeological site regarded as the first or most typical example a particular culture or tradition (Anfinson 1997:145).

**Uniface** A stone tool worked on one face

**Variety** A smaller classification division of the pottery type

**Vertical** A decorative or surface finish orientation that is perpendicular to the lip, which is horizontal; also used by some archaeologists to describe a straight rim profile

**Vertical parallel textile impressed** Hartlen (1996a:101) used the phrase 'parallel vertical textile impressed' to describe the exterior surface finish of some pottery vessels from southwestern Manitoba. It is an appropriate term, although the author chose to use this particular phrase since the vertical nature of the cordage seemed to be quite important to many potters who inhabited this area, and the cords are not always exactly parallel. This term is used to indicate a different textile impression, rather than the 'amorphous' impressions characteristic of Selkirk pottery. The cords are visible, parallel, and oriented vertically in relation to the lip, with definite interlinking or weaving of cordage visible. Otherwise, the surface finish would be called cord marked.

**Vitrification** Vitrification, or the formation of glassy material, occurs when pottery is fired at very high temperatures. It may occur partially, or completely when all pore spaces are filled with glass (Shepard 1974:372).

**Ware** A ware consists of several pottery types that are similar in shape, manufacturing technique, and surface finish (Anfinson 1997:145). Some archaeologists also consider decoration as part of ware classification (e.g. Duck Bay ware).

**Willey and Phillips system** Archaeological classification scheme devised by Willey and Phillips in 1958. Consists of the following units, from smallest to largest: component, phase (spatially restricted, short temporal duration), tradition (primarily temporal)/horizon (primarily spatial; approximately contemporaneous), culture/civilization, and climax.

**Woodland** This term refers to an archaeological tradition, dating from 500 B.C. to A.D. 1200 in Minnesota, which is characterized by interment of human burials in mounds, pottery making, horticulture, bow and arrow usage, and semi-permanent villages (Anfinson 1997:145).